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COMPUTERS IN INFORMATION SCIENCES: PROGRAMMING LANGUAGE

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A DDC BIBLIOGRAPHY

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This bibliography compiles references dealing specifically with Programming Language in a series of bibliographies on Computers in Information Sciences.

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*Programming Language						
*Information Retrieval						
*Programming(Computers)						
Digital Computers						
Analog Computers						
Instruction Manuals						
Compilers						
Time Sharing						
Computer Storage Devices						
Analog-Digital Computers						
Data Processing Systems						

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COMPUTERS IN INFORMATION SCIENCES: PROGRAMMING LANGUAGE

A DDC BIBLIOGRAPHY

January 1968 - April 1972

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ALEXANDRIA, VIRGINIA 22314

FOREWORD

This bibliography is a compilation of references on *Programming Language* in a series of bibliographies on Computers in Information Sciences. Entries were selected from documents processed into the Defense Documentation Center's data bank during the period of October 1968 to September 1972 and updates AD-679 401.

Corporate Author-Monitoring Agency, Subject, Title, Personal Author, Contract Number, and Report Number Indexes are included.

BY ORDER OF THE DIRECTOR, DEFENSE SUPPLY AGENCY

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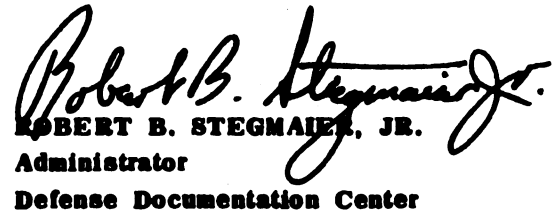

ROBERT B. STEGMAIER, JR.
Administrator
Defense Documentation Center

C O N T E N T S

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0ML1

AD-666 992 9/2 6/4
TRACOR INC AUSTIN TEX

THE USE OF CONCEPTUAL RELATIONS IN CONTENT ANALYSIS AND DATA BASE STORAGE, (U)

JAN 68 57P SCHANK, ROGER C, ;
REPT. NO. TRACOR-68-347-U

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTERS, ARTIFICIAL INTELLIGENCE), LINGUISTICS, DATA STORAGE SYSTEMS, ENGLISH LANGUAGE, ANALYSIS, SEMANTICS, MEMORY, DATA TRANSMISSION SYSTEMS, PROGRAMMING LANGUAGES, CYBERNETICS (U)

MACHINES THAT MAY BE SAID TO FUNCTION INTELLIGENTLY MUST BE ABLE TO UNDERSTAND QUESTIONS POSED IN NATURAL LANGUAGE. SINCE NATURAL LANGUAGE MAY BE ASSUMED TO HAVE AN UNDERLYING CONCEPTUAL STRUCTURE, IT IS DESIRABLE TO HAVE THE MACHINE STRUCTURE ITS OWN EXPERIENCE, BOTH LINGUISTIC AND NONLINGUISTIC, IN A MANNER CONCOMITANT WITH THE HUMAN METHOD FOR DOING SO. THIS PAPER PRESENTS SOME ATTEMPTS AT ORGANIZING THE MACHINE'S INFORMATION STORE CONCEPTUALLY, THE ATTEMPTS ARE DISCUSSED AND COORDINATED INTO A FRAMEWORK FOR WHAT MAY BE A PRACTICABLE SYSTEM. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML:

AD-667 280 9/2
ILLINOIS UNIV URBANA DEPT OF COMPUTER SCIENCE

ILLIAC IV. (U)

DESCRIPTIVE NOTE: QUARTERLY PROGRESS REPT. NOV-DEC 67.
FEB 68 27P
REPT. NO. 256
CONTRACT: AF 30(602)-4144

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-665 916.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, *DIGITAL COMPUTERS), PROGRAMMING(COMPUTERS), PROGRAMMING LANGUAGES, SYNTAX, SEMANTICS, MAINTENANCE, INPUT-OUTPUT DEVICES, MATRIX ALGEBRA, PARTIAL DIFFERENTIAL EQUATIONS, LINEAR PROGRAMMING, GRAPHICS, METEOROLOGICAL CHARTS, PHASED ARRAYS, GUIDED MISSILE DEFENSE SYSTEMS, RADAR TRACKING, ANTHROPOLOGY (U)
IDENTIFIERS: ILLIAC 4 COMPUTERS (U)

CONTENTS: HARDWARE - SYSTEM DESIGN; DIAGNOSTIC PROGRAMMING; SOFTWARE - LANGUAGE TRANSLATOR WRITING SYSTEM; TRANQUIL; GLEIPNIR; SYSTEM K; APPLICATIONS - PARTIAL DIFFERENTIAL EQUATIONS; SIGNAL PROCESSING; MATRICES; LINEAR PROGRAMMING; COMPUTER GRAPHICS; WEAPONS EFFECTS CALCULATIONS; ANTHROPOLOGY APPLICATIONS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO, /ZOML1

AD-667 635 9/2
CALIFORNIA UNIV BERKELEY

REFERENCE MANUAL FOR THE TIME-SHARING EXECUTIVE, (U)

JAN 68 26P DURHAM,L. !ETHERTON,M. !
REPT. NO. R-22
CONTRACT! SD-185

UNCLASSIFIED REPORT

DESCRIPTORS! (*DATA PROCESSING SYSTEMS, TIME SHARING), (*PROGRAMMING(COMPUTERS), MULTIPLE OPERATION), (*TIME SHARING, INSTRUCTION MANUALS), TELETYPE SYSTEMS, REMOTE CONTROL SYSTEMS, PROGRAMMING LANGUAGES, INPUT-OUTPUT DEVICES (U)
IDENTIFIERS! ON-LINE SYSTEMS (U)

THE PROJECT GENIE OPERATING SYSTEM IS A MEDIUM SCALE MULTI-ACCESS COMPUTATIONAL SYSTEM WHICH IMPLEMENTS A POWERFUL AND COMPLEX USER MACHINE. IT IS THE ROLE OF THE COMMAND LANGUAGE (HERE CALLED THE EXECUTIVE) TO PROVIDE SOME TOOLS TO CONTROL THIS USER MACHINE, AND TO PROVIDE THOSE SERVICES WHICH USERS HAVE COME TO EXPECT OF CONVERSATIONAL SYSTEMS. THIS DOCUMENT DESCRIBES THE SYSTEM COMMAND LANGUAGE. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML;

AD-669 096 9,2
LOGICON INC SAN PEDRO CALIF

COMPARATIVE EVALUATION OF PL/I. (U)

DESCRIPTIVE NOTE: FINAL REPT. AUG 67-FEB 68,
APR 68 290P RUBEY,RAYMOND J. ;WICK,
RICHARD C. ;STONER,WILLIAM J. ;BENTLEY,LAUREL
;
REPT. NO. CS-6813-RO106
CONTRACT: F19628-67-C-0396
PROJ: AF-6917
MONITOR: ESD TR-68-150

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, EFFECTIVENESS), CORRELATION TECHNIQUES, ERRORS, PROGRAMMING(COMPUTERS), TEST METHODS, COMPATIBILITY, DECISION MAKING, INPUT-OUTPUT DEVICES, PERFORMANCE(HUMAN), PROBLEM SOLVING, ANALYSIS, DATA PROCESSING SYSTEMS, DATA STORAGE SYSTEMS, MAN-MACHINE SYSTEMS, TIME, INFORMATION RETRIEVAL (U)
IDENTIFIERS: FORTRAN, JOVIAL, COBOL, *PL/I PROGRAMMING LANGUAGE, DEBUGGING(ENGINEERING) (U)

SEVEN BENCHMARK PROBLEMS WERE EACH IMPLEMENTED TWICE BY THE SAME PROGRAMMER, ONCE IN PL/I AND ONCE IN ANOTHER HIGHER LEVEL LANGUAGE (COBOL, FORTRAN, OR JOVIAL) APPROPRIATE TO THE APPLICATION AREA REPRESENTED BY THE PROBLEM. OVERALL, IT WAS FOUND THAT PL/I HAD ADVANTAGES OVER BOTH FORTRAN AND JOVIAL AND WAS ABOUT EQUAL TO COBOL FOR THE RESPECTIVE APPLICATION AREAS. THE QUANTITATIVE DATA OBTAINED FROM THE IMPLEMENTATIONS GENERALLY INDICATED THAT THE PL/I VERSIONS HAD FEWER STATEMENTS IN THE SOURCE PROGRAMS AND WERE CODED MORE RAPIDLY THAN THEIR COMPARISON-LANGUAGE COUNTERPARTS BUT TOOK LONGER TO DEBUG AND HAD A HIGHER FREQUENCY OF ERRORS. THE QUALITATIVE, SUBJECTIVE OPINIONS OF THE PROBLEM PROGRAMMERS AND PROJECT ANALYSIS INDICATED THAT PL/I WAS GENERALLY SUPERIOR TO THE COMPARISON LANGUAGES WITH REGARD TO SUITABILITY FOR A WIDE RANGE OF PROBLEMS, NATURALNESS, GENERALITY, AND EASE OF USE. INEFFICIENCIES OBSERVED IN THE LANGUAGE COMPILERS AND ASSOCIATED OPERATING SYSTEMS UTILIZED FOR THE BENCHMARK PROBLEMS INDICATED THAT IMPROVEMENTS ARE REQUIRED IN THESE AREAS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-669 325 9/2
MITRE CORP BEDFORD MASS

COLINGO C-10 USERS' MANUAL, VOLUME 1. (U)

MAY 68 237P
REPT. NO. MTR-35-VOL-1
CONTRACT: AF 19(628)-5165
PROJ: 512V
MONITOR: ESD TR-66-653-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-669 326.

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), INSTRUCTION MANUALS), PROGRAMMING LANGUAGES, DATA PROCESSING SYSTEMS, FLOW CHARTING, SUBROUTINES (U)
IDENTIFIERS: PROFILE PROGRAMMING LANGUAGE, COLINGO C-10 PROGRAMMING SYSTEM, DATA MANAGEMENT SYSTEMS (U)

THE COLINGO C-10 USERS' MANUAL, A COMBINATION OF TUTORIAL AND REFERENCE MATERIAL, IS PRESENTED IN TWO VOLUMES. THIS VOLUME CONTAINS A GENERAL INTRODUCTION TO THE SYSTEM, A DESCRIPTION OF THE C-10 FILE STRUCTURE, A REFERENCE MANUAL OF THE PROFILE LANGUAGE, A COMPARISON OF THE PROFILE LANGUAGE AND THE COLINGO-D CONTROL LANGUAGE, AND A SECTION ABOUT THE C-10 EDITOR. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML;

AD-669 326 9/2
MITRE CORP BEDFORD MASS

COLINGO C-10 USERS' MANUAL. VOLUME II. (U)

MAY 68 166P
REPT. NO. MTR-35-VOL-2
CONTRACT: AF 19(628)-5165
PROJ: AF-504F. AF-512V
MONITOR: ESD TR-66-653-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1. AD-669 325.

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), INSTRUCTION MANUALS). PROGRAMMING LANGUAGES. DATA PROCESSING SYSTEMS. COMPILERS. FLOW CHARTING. SUBROUTINES (U)
IDENTIFIERS: STEP PROGRAMMING LANGUAGE. COLINGO C-10 PROGRAMMING SYSTEM. DATA MANAGEMENT SYSTEMS (U)

THE COLINGO C-10 USERS' MANUAL. A COMBINATION OF TUTORIAL AND REFERENCE MATERIAL. IS PRESENTED IN TWO VOLUMES. THIS VOLUME CONTAINS INFORMATION ON MACHINE CONFIGURATIONS. PROCEDURES FOR OPERATING AND LOADING THE SYSTEM. A DESCRIPTION OF THE C-10 GENERAL PURPOSE MACRO FACILITY (TERSES AND ACTORS). A GUIDE TO THE STEP LANGUAGE. A SET OF INSTRUCTIONS FOR PREPARING MACHINE PROCEDURES. AND A LIST OF SYSTEM ERROR MESSAGES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-670 054 9/2 6/4
STANFORD RESEARCH INST MENLO PARK CALIF

GRAPHICAL-DATA-PROCESSING RESEARCH STUDY AND EXPERIMENTAL INVESTIGATION. (U)

DESCRIPTIVE NOTE: QUARTERLY REPT. NO. 8, 1 DEC 67-29 FEB 68,
MAY 68 33P MUNSON, J. H. ;
REPT. NO. 30
CONTRACT: DA-28-043-AMC-01901(E)
PROJ: DA-1-P-620501-A-448
TASK: 1-P-620501-A-44802
MONITOR: ECOM 01901-30

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-665 391.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, GRAPHICS); (*CHARACTER RECOGNITION, *READING MACHINES); (*LEARNING MACHINES, CHARACTER RECOGNITION); ADAPTIVE SYSTEMS, PROCESSING, CLASSIFICATION, PROGRAMMING LANGUAGES, PATTERN RECOGNITION, OPTICAL SCANNING, DIGITAL COMPUTERS, ERRORS, TRAINING, ALGORITHMS, VECTOR ANALYSIS, SUBROUTINES (U)
IDENTIFIERS: FORTRAN (U)

THIS REPORT DESCRIBES THE CONTINUING DEVELOPMENT OF SCANNING, PREPROCESSING, CHARACTER-CLASSIFICATION, AND CONTEXT-ANALYSIS TECHNIQUES FOR HAND-PRINTED TEXT, SUCH AS COMPUTER CODING SHEETS IN THE FORTRAN LANGUAGE. A SERIES OF LEARNING-MACHINE CLASSIFICATION EXPERIMENTS WERE PERFORMED ON A FILE OF HAND-PRINTED CHARACTERS CONTAINING 147 FORTRAN ALPHABETS FROM 49 AUTHORS. THE BEST RESULTS OBTAINED FELL FAR SHORT OF THOSE FOR ANALOGOUS EXPERIMENTS, REPORTED EARLIER, WHERE THE TRAINING AND TESTING CHARACTERS WERE PRINTED BY A SINGLE AUTHOR. WE DESCRIBE SOME EARLY RESULTS RELATING TO THE PROBLEM OF MANIPULATING THE ADAPTIVE WEIGHTS OF THE MINOS II LEARNING MACHINE DIRECTLY AND INDIVIDUALLY FROM THE SDS 910 COMPUTER. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-670 503 9/2
RAND CORP SANTA MONICA CALIF

BLOCK PROGRAMMING IN O/S-360 ASSEMBLY CODE, (U)

MAY 68 10P BALZER, R. M. 1
REPT. NO. P-3810

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, COMPUTERS), DATA STORAGE SYSTEMS, ITERATIVE METHODS, ALGORITHMS, COMPUTER PROGRAMS, SYMBOLS, ERRORS (U)
IDENTIFIERS: BLOCK STRUCTURE(PROGRAMMING LANGUAGES), MACROS PROGRAMMING LANGUAGE, ALGOL (U)

THE DOCUMENT DISCUSSES BLOCK PROGRAMMING AS A MAJOR FACILITY IN COMPUTER OPERATIONS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-670 524 5/9 9/2
WASHINGTON UNIV SEATTLE COMPUTER SCIENCE GROUP

WRITEACOURSE: AN EDUCATIONAL PROGRAMMING LANGUAGE. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAY 68 23P HUNT,EARL B. ;ZOSEL,MARY ;
REPT. NO. TR-68-1-02
CONTRACT: AF-AFOSR-1311-67
MONITOR: AFOSR 68-1299

UNCLASSIFIED REPORT

DESCRIPTORS: (*EDUCATION, PROGRAMMING LANGUAGES), DIGITAL COMPUTERS, PROGRAMMED INSTRUCTION, TEACHING MACHINES, PROGRAMMING(COMPUTERS), FEASIBILITY STUDIES, SYNTAX, SEMANTICS, SUBROUTINES (U)
IDENTIFIERS: COMPUTER AIDED DESIGN, WRITEACOURSE PROGRAMMING LANGUAGE, ALGOL (U)

A USER ORIENTED LANGUAGE FOR COMPUTER AIDED INSTRUCTION IS DESCRIBED. THE LANGUAGE IS DESIGNED FOR IMPLEMENTING PROGRAMMED INSTRUCTION COURSES ON GENERAL PURPOSE INTERACTIVE COMPUTING SYSTEMS. THE LANGUAGE CAN BE UTILIZED ON ANY INTERACTIVE COMPUTING SYSTEM WITH A PL/I COMPILER. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML/

AD-670 842 9/2
BATTELLE MEMORIAL INST COLUMBUS OHIO COLUMBUS LABS

THE COMPILER FOR THE PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT (PLACE), PART I: PLACE LANGUAGE AND COMPILER, (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 DEC 63-1 DEC 67, MAY 68 138P WENT,BURTON H. /
CONTRACT: AF 33(615)-1126
PROJ: AF-8119
TASK: 811926
MONITOR: AFAPL TR-68-27-PT-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-670 843, PT. 2, REPORT ON PROJ. DEVELOPMENT OF COMPILER FOR PLACE.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, CHECKOUT EQUIPMENT), (*COMPILERS, PROGRAMMING LANGUAGES), INSTRUCTION MANUALS, PROGRAMMING(COMPUTERS), COMPUTER PROGRAMS, TEST EQUIPMENT, FLOW CHARTING, DIGITAL COMPUTERS (U)
IDENTIFIERS: *PLACE(PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT), *PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT, AUTOMATIC CHECKOUT EQUIPMENT, IBM 7094 (U)

PLACE (PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT) WAS DEVELOPED TO PROVIDE (1) A LANGUAGE THAT COULD BE USED BY ENGINEERS TO PROGRAM A VARIETY OF TEST SYSTEMS, AND (2) A LANGUAGE FOR WHICH COMPILERS COULD BE DEVELOPED QUICKLY AND INEXPENSIVELY. THE APPROACH TAKEN WAS TO DEVELOP A BASIC PROGRAMMING LANGUAGE WITH WHICH INDIVIDUALS CLOSELY ASSOCIATED WITH A PARTICULAR CHECKOUT MACHINE AND CHECKOUT ENVIRONMENT COULD EASILY DEVELOP BOTH THE STATEMENTS TO BE USED BY ENGINEERS FOR CHECKOUT PROGRAMMING, AND THE COMPILER TO TRANSLATE THE STATEMENTS INTO CODE FOR THE TEST SYSTEM. ASSOCIATED WITH THE PLACE LANGUAGE IS A COMPUTER PROGRAM CALLED THE PLACE PROCESSOR WHICH OPERATES ON THE IBM 7094 COMPUTER. THIS PROGRAM FORMS THE MAJOR PORTION OF THE COMPILER FOR A CHECKOUT SYSTEM. THIS REPORT IS DEVOTED PRIMARILY TO A FORMAL DESCRIPTION OF THE PLACE LANGUAGE, THE DETAILED DOCUMENTATION OF THE PLACE PROCESSOR, AND TO A DISCUSSION OF THE USE OF THE PROCESSOR IN COMPILER DEVELOPMENT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-670 843 9/2
BATTELLE MEMORIAL INST COLUMBUS OHIO COLUMBUS LABS

THE COMPILER FOR THE PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT (PLACE). PART II. APPENDIXES-DETAILED COMPILER DOCUMENTATION. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 DEC 63-1 DEC 67, MAY 68 573P WENT,BURTON H. ;
CONTRACT: AF 33(615)-1126
PROJ: AF-8119
TASK: 811926
MONITOR: AFAPL TR-68-27-PT-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-670 842, PT. 1, REPORT ON PROJ. DEVELOPMENT OF COMPILER FOR PLACE.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, CHECKOUT EQUIPMENT), (*COMPILERS, PROGRAMMING LANGUAGES), INSTRUCTION MANUALS, PROGRAMMING(COMPUTERS), COMPUTER PROGRAMS, TEST EQUIPMENT, FLOW CHARTING, SUBROUTINES, ERRORS, DIGITAL COMPUTERS (U)
IDENTIFIERS: *PLACE(PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT), *PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT, AUTOMATIC CHECKOUT EQUIPMENT, IBM 7094 (U)

CONTAINS PROGRAM LISTINGS AND OTHER DETAILED DOCUMENTATION OF THE COMPILER. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML)

AD-670 967 2/2
PENNSYLVANIA UNIV PHILADELPHIA MOORE SCHOOL OF ELECTRICAL ENGINEERING

LIST PROCESSING RESEARCH TECHNIQUES. (U)

DESCRIPTIVE NOTE: QUARTERLY PROGRESS REPT. NO. 4, 15 APR 67-14 AUG 67,
MAR 68 158P CARR,J. W. , III;GRAY,H. J. ;
REPT. NO. 68-22
CONTRACT: DA-28-043-AMC-02377(E)
PROJ: DA-1E0,20401,A327
TASK: 1E0.20401,A327,03
MONITOR: ECOM 02377-4

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-661 076.

DESCRIPTORS: (*COMPUTER STORAGE DEVICES, FEASIBILITY STUDIES), (*PROGRAMMING LANGUAGES, FEASIBILITY STUDIES), DATA PROCESSING SYSTEMS, FLOW CHARTING, SUBROUTINES, DIGITAL COMPUTERS, ADAPTIVE SYSTEMS, DESIGN, PROGRAMMING(COMPUTERS), HANDBOOKS (U)
IDENTIFIERS: SPRINT PROGRAMMING LANGUAGE, *LIST PROCESSING, GROWING MACHINES, PUSH DOWN MEMORIES (U)

REPORTS AN INVESTIGATION ON THE FORMAL CHARACTERISTICS AND FEASIBILITY OF THE POTENTIAL AND UTILIZATION OF THE LAST-IN-FIRST-OUT AND, THE FIRST-IN-FIRST-OUT LIST MEMORIES. THIS REPORT COVERS ONE YEAR'S EFFORT AND ALSO INCLUDES PROGRESS IN THE FOURTH QUARTER. PROGRESS HAS BEEN MADE IN THE FOLLOWING AREAS: (1) DEVELOPMENT OF SOFTWARE TECHNIQUES - ADDITIONAL INSTRUCTIONS HAVE BEEN INCORPORATED IN THE SPRINT SYSTEM AND A PROGRAM HAS BEEN WRITTEN IN SPRINT WHICH COMPILES AND EXECUTES A FORTRAN-LIKE LANGUAGE, THE SPEED OF THE GROWING MACHINE HAS BEEN INCREASED BY HASH-ADDRESSING OF THE NAME TABLE, PROVISION FOR FREE-FORM INPUT HAS BEEN MADE, AND A NEW GROWING MACHINE, CALLED GAIN, OF GREATER SPEED AND FLEXIBILITY HAS BEEN COMPLETED WHICH DRAWS HEAVILY ON THE IDEAS PREVIOUSLY DEVELOPED IN GROMAC AND SPRINT. (2) STUDY OF UNCONVENTIONAL PROCESSOR ORGANIZATION AND OTHER USES OF LIST MEMORIES - HARDWARE REALIZATION OF THE GROWING MACHINE AND USE OF FIRST-IN-FIRST-OUT LIST MEMORIES AS ADDRESSABLE MEMORIES HAVE BEEN STUDIED. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-671 125 9/2 9/5
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB

GRAPHICS. (U)

DESCRIPTIVE NOTE: SEMIANNUAL TECHNICAL SUMMARY REPT, 1 DEC 67-31 MAY 68.
MAY 68 30P RAFFEL, JACK I. 1
CONTRACT: AF 19(628)-5167, ARPA ORDER-691
MONITOR: ESD TR-68-61

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-663 728.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, GRAPHICS), (*GRAPHICS, MAN-MACHINE SYSTEMS), PROGRAMMING LANGUAGES, INPUT-OUTPUT DEVICES, DISPLAY SYSTEMS, REMOTE CONTROL SYSTEMS, TIME SHARING, GATES(CIRCUITS), DATA STORAGE SYSTEMS, INTEGRATED CIRCUITS, MANUFACTURING METHODS, COMPILERS (U)
IDENTIFIERS: COMPUTER AIDED DESIGN, COMPUTER AIDED GRAPHICS, TX-2 COMPUTER, DEBUGGING(COMPUTERS), AMBIT/G PROGRAMMING LANGUAGE, ON-LINE SYSTEMS, LARGE SCALE INTEGRATED CIRCUITS, LEAP SYSTEM (U)

THE LEAP SYSTEM HAS BEEN MODIFIED TO PROVIDE FOR MERGING CURRENT AND PREVIOUSLY SAVED DATA STRUCTURES AND INCORPORATION OF A SUBLANGUAGE FOR COMMUNICATING WITH THE INTERRUPT EXECUTIVE. BREAKPOINT TRAPPING FACILITIES HAVE BEEN USED FOR RUNNING PROGRAMS IN SINGLE-STEP MODE, PROGRAM-TIMING EXPERIMENTS, AND IN PROVIDING VARIABLE RESPONSE DELAYS FOR HUMAN FACTORS STUDIES. AMBIT/G, A PROGRAMMING LANGUAGE FOR MANIPULATING DIRECTED GRAPHS, IS BEING IMPLEMENTED USING LEAP AND THE INTERACTIVE GRAPHICS FACILITIES OF TX-2. A FIRST SET OF WORKING SEMICONDUCTOR CIRCUITS HAS BEEN MADE FROM MASKS GENERATED VIA TX-2 PROGRAMS. A WRITTEN-INPUT VERSION OF THE MASK-GENERATION PROGRAM HAS BEEN USED TO PRODUCE MASKS FOR A READ-ONLY MEMORY DESIGN. IN ADDITION, THE LABORATORY SERVICE FACILITY IS NOW USING THIS PROGRAM FOR ALMOST ALL OF ITS HYBRID CIRCUIT MASK LAYOUT JOBS. WORK HAS CONTINUED ON COMPUTER-AIDED CIRCUIT TESTING WITH THE ADDITION OF NEW FEATURES TO THE TIC TERMINAL AND THE DEVELOPMENT OF PROCEDURES FOR DIAGNOSING SINGLE-GATE FAILURES IN COMPLEX ARRAYS. EXPERIMENTS ARE PLANNED FOR EVALUATING A TV DISPLAY BUFFERED BY THE FILM MEMORY SOON TO BE INSTALLED IN TX-2. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-671 917 9/2
RAND CORP SANTA MONICA CALIF

GRAIL/GPSS: GRAPHIC ON-LINE MODELING, (U)

JUN 68 15P HAVERTY, J. P. I
REPT. NO. P-3838

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT IBM SEMINAR ON OPERATIONS IN AEROSPACE INDUSTRY, MODELS IN PLANNING AND CONTROL, NEWPORT BEACH, CALIF., 29-30 APR, 1968.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, SIMULATION), (*PROGRAMMING(COMPUTERS), *GRAPHICS), FLOW CHARTING, INPUT-OUTPUT DEVICES, TIME SHARING, PROGRAMMING LANGUAGES, CATHODE RAY TUBE SCREENS (U)
IDENTIFIERS: COMPUTER SIMULATION, ON-LINE SYSTEMS, COMPUTER AIDED GRAPHICS, GRAIL PROJECT, GPSS PROGRAMMING LANGUAGE, LIGHT PENS (U)

COMPUTER-BASED SIMULATION HAS ALWAYS BEEN ONE OF THE MAJOR TECHNIQUES USED IN SYSTEM ANALYSIS BUT MANY ANALYSTS HAVE OBJECTED TO THE LEAD-TIME REQUIRED TO DEVELOP A USEFUL MODEL. THIS IS A STATUS REPORT ON A CAPABILITY BEING DEVELOPED AT THE RAND CORPORATION THAT ATTEMPTS TO PROVIDE THE SYSTEMS ANALYST WITH A WHOLE NEW DIMENSION IN THE FIELD OF SIMULATION AND, IN PARTICULAR, OFFERS AN OPPORTUNITY FOR MAJOR DECREASES IN THE AMOUNT OF ANALYST'S TIME REQUIRED TO PRODUCE A WORKING SIMULATION MODEL. THE PAPER REVIEWS SOME OF THE DEFICIENCIES IN THE CURRENT ART OF MODEL-BUILDING, DESCRIBES A RESEARCH PROJECT THAT FORMED AN ESSENTIAL BASE ON WHICH TO BUILD THIS NEW DIMENSION OF CAPABILITY, AND ILLUSTRATES THE PROGRESS OF THE PROJECT TO DATE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-672 005 15/7 9/2 5/9
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF

OPERATIONAL SPECIFICATION FOR A COMPUTER-DIRECTED TRAINING SUBSYSTEM FOR INTEGRATION INTO THE AIR FORCE PHASE II BASE LEVEL SYSTEM, (U)

MAR 68 202P BUTLER,A. K. ICOWDERY,R. S. ICULLEN,J. W. I

REPT. NO. SCD-TM-(L)-3724/000/00
CONTRACT: F19628-67-C-0427
MONITOR: ESD TR-68-152

UNCLASSIFIED REPORT

DESCRIPTORS: (*AIR FORCE OPERATIONS, *DATA PROCESSING SYSTEMS), (*COMPUTER PERSONNEL, MILITARY TRAINING), TRAINING DEVICES, AUTOMATIC, SPECIFICATIONS, OPERATIONS RESEARCH, INFORMATION RETRIEVAL, INPUT-OUTPUT DEVICES, DATA STORAGE SYSTEMS, COMPUTERS, DATA TRANSMISSION SYSTEMS, INSTRUCTION MANUALS, SEQUENCES, SUBROUTINES, PROGRAMMING LANGUAGES, COMPUTER PROGRAMS (U)
IDENTIFIERS: *COMPUTER DIRECTED TRAINING, PLANIT(PROGRAMMING LANGUAGE FOR INTERACTIVE TEACHING), PROGRAMMING LANGUAGE FOR INTERACTIVE TEACHING (U)

THIS DOCUMENT PRESENTS THE SPECIFICATIONS FOR A COMPUTER-DIRECTED TRAINING SUBSYSTEM TO BE INTEGRATED INTO THE AIR FORCE PHASE II BASE LEVEL SYSTEM. THE SUBSYSTEM IS TO BE USED FOR THE CONSTRUCTION AND PRESENTATION OF A VARIETY OF TRAINING MATERIALS TO SELECTED TRAINEES WITHIN THE PHASE II BASE LEVEL SYSTEM. THE CAPABILITIES AND LIMITATIONS OF THE BASIC COMPONENTS COMPRISING THE SUBSYSTEM ARE DESCRIBED. INCLUDED IS THE CAPABILITY TO PROCESS TRAINEE RECORDS ON AN INDIVIDUAL BASIS. AN INTERIM CAPABILITY IN WHICH THE LESSON BUILDING MODE OF PLANIT (PROGRAMMING LANGUAGE FOR INTERACTIVE TEACHING) IS USED TO CONSTRUCT A TRAINING MODULE FOR THE PHASE II BASE LEVEL SYSTEM IS ALSO DESCRIBED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-672 206 9/2
MICHIGAN UNIV ANN ARBOR

TRAMP: A RELATIONAL MEMORY WITH AN ASSOCIATIVE BASE. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAY 68 92P ASH,WILLIAM ;SIBLEY,EDGAR ;
REPT. NO. TR-5
CONTRACT: DA-49-083-OSA-3050, ARPA ORDER-716
PROJ: ORA-07449

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON PROJ. CONCOMP.

DESCRIPTORS: (*COMPUTER STORAGE DEVICES, *PROGRAMMING LANGUAGES), INFORMATION RETRIEVAL, SEARCH THEORY, PROGRAMMING(COMPUTERS), DIGITAL COMPUTERS, DATA STORAGE SYSTEMS, FEASIBILITY STUDIES (U)
IDENTIFIERS: TRAMP PROGRAMMING LANGUAGE, CONTENT ADDRESSABLE MEMORIES, CONCOMP PROJECT, HASH CODING (U)

THIS REPORT DESCRIBES THE THEORY AND IMPLEMENTATION OF AN EXPERIMENTAL LANGUAGE CALLED TRAMP, WHICH IS A SOFTWARE SIMULATION OF A CONTENT-ADDRESSABLE MEMORY. THE SYSTEM CONSISTS OF AN ASSOCIATIVE DATA STRUCTURE EMBEDDED IN AN INTERPRETIVE LANGUAGE, ALLOWING GREAT FLEXIBILITY AND STRONG RECURSIVE POWER. THE SYSTEM HAS FURTHER BEEN EXTENDED WITH A LOGICAL INFERENCE CAPABILITY BY SUPERIMPOSING A RELATIONAL STRUCTURE OVER THE ASSOCIATIVE MEMORY. THE RESULTING LANGUAGE HAS ALREADY PROVED TO BE EXTREMELY POWERFUL IN SEVERAL APPLICATIONS, AND CAN BE TERMED A LANGUAGE FOR DEVELOPING QUESTION-ANSWERING AND INTERACTIVE COMMUNICATION SYSTEMS. THIS REPORT DISCUSSES THE THEORY AND DESIGN CONSIDERATIONS, DETAILS OF MACHINE IMPLEMENTATION, AND DETAILS OF OPERATION WITH EXAMPLES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-672 315 9/2
NAVAL RESEARCH LAB WASHINGTON D C

NELIAC-N, THE NAREC VERSION OF THE NELIAC PROGRAMMING LANGUAGE. (U)

DESCRIPTIVE NOTE: INTERIM REPT.,
JUN 68 86P KALLANDER, JOHN W. ;
REPT. NO. NRL-6664, NRL COMPUTER REF-1
PROJ: RR003-09-41-5101

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INSTRUCTION MANUALS), PROGRAMMING(COMPUTERS), COMPILERS, DIGITAL COMPUTERS, SUBROUTINES, ERRORS (U)
IDENTIFIERS: *NELIAC PROGRAMMING LANGUAGE, *NELIAC-N PROGRAMMING LANGUAGE, CDC 3870 COMPUTERS (U)

THIS REPORT CONTAINS A TUTORIAL AND THE FINAL DEFINITIVE DESCRIPTION OF NELIAC-N (THE VERSION OF THE NELIAC LANGUAGE IMPLEMENTED ON THE NAREC BY MEANS OF THE NELIAC-N COMPILER), WHICH FURNISHED THE TRANSITION VEHICLE BETWEEN THE NAREC AND THE CDC 3870 BEING INSTALLED AT NRL. NELIAC IS A PROBLEM-ORIENTED, MACHINE-INDEPENDENT PROGRAMMING LANGUAGE WHICH ENABLES PROGRAMMERS, SCIENTISTS, AND ENGINEERS TO WRITE THEIR PROGRAMS IN A MATHEMATICAL LANGUAGE RATHER THAN REQUIRING AN ACTUAL MACHINE LANGUAGE OR AN ASSEMBLY LANGUAGE. NELIAC THUS MINIMIZES THE KNOWLEDGE OF THE ACTUAL COMPUTER REQUIRED BY THE PROGRAMMER, MAXIMIZES THE READABILITY OF THE PROGRAMS THEMSELVES, AND PROVIDES CARRY-OVER VALUE OF PROGRAMS FROM ONE COMPUTER TO ANOTHER. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-674 617 9/2
MORRISSEY (JOHN) ASSOCIATES INC NEW YORK

COMPUTER PROGRAMS: INTERNAL REPRESENTATION. (U)

DESCRIPTIVE NOTE: FINAL REPT. 15 MAY 67-15 MAY 68,
MAY 68 88P BARBIERI,R. ;MORRISSEY,J. ;
CONTRACT: F19628-67-C-0303
PROJ: AF-4641
TASK: 464102
MONITOR: AFCRL 68-0319

UNCLASSIFIED REPORT

DESCRIPTORS: (*TIME SHARING, *PROGRAMMING LANGUAGES), (*DIGITAL COMPUTERS, TIME SHARING), PROGRAMMING(COMPUTERS), COMPILERS, COMPUTER STORAGE DEVICES, SUBROUTINES, ALGORITHMS (U)
IDENTIFIERS: IBM 1130 COMPUTERS, FORTRAN (U)

THIS REPORT DESCRIBES AN INTERNAL REPRESENTATION OF THE FORTRAN EXECUTABLE STATEMENTS IN THE 1130 COMPUTER. AN INTERPRETER IS DESIGNED FOR EXECUTION OF THE STATEMENTS IN A TIME-SHARING SYSTEM. THE EFFECT OF THE INTERNAL FORM ON THE ALGORITHM FOR EXECUTION OF EACH STATEMENT IS DISCUSSED. PROBLEMS, DUE TO LANGUAGE FEATURES, CORE SIZE, OR THE TIME SHARING ENVIRONMENT, ARE PRESENTED AND SOLUTIONS ARE PROPOSED GIVING CONSIDERATION TO THE TRADEOFF THAT CAN BE MADE BETWEEN SPACE AND TIME. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML/

AD-675 037 9/2
STANFORD UNIV CALIF DEPT OF COMPUTER SCIENCE

AN ALGOL-BASED ASSOCIATIVE LANGUAGE. (U)

AUG 68 36P FELDMAN,J. A. /ROVNER,P. D. /
REPT. NO. AI-MEMO-66
CONTRACT: SD-183

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH MASSACHUSETTS INST. OF TECH., LEXINGTON. LINCOLN LAB.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, COMPUTER STORAGE DEVICES), ARTIFICIAL INTELLIGENCE, INFORMATION RETRIEVAL, SYNTAX, SEMANTICS, DESIGN, DIGITAL COMPUTERS (U)
IDENTIFIERS: HASH CODING, ALGOL, LEAP PROGRAMMING LANGUAGE, ASSOCIATIVE MEMORIES (U)

A HIGH-LEVEL PROGRAMMING LANGUAGE FOR LARGE COMPLEX RELATIONAL STRUCTURES HAS BEEN DESIGNED AND IMPLEMENTED. THE UNDERLYING RELATIONAL DATA STRUCTURE HAS BEEN IMPLEMENTED USING A HASH-CODING TECHNIQUE. THIS DISCUSSION INCLUDES A COMPARISON WITH OTHER WORK AND EXAMPLES OF APPLICATIONS OF THE LANGUAGE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO, /ZOML1

AD-678 589 9/2
ROME AIR DEVELOPMENT CENTER GRIFFISS AFB N Y

PROGRAM TRANSFERABILITY STUDY, (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
NOV 68 37P MEALY,GEORGE H, ;CHEATHAM,
T. E. , JR.;FARBER,DAVID J. ;MORENOFF,
EDWARD ;SATTLEY,KIRK ;
REPT. NO. RADC-TR-68-341
PROJ: AF-5581
TASK: 558102

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING(COMPUTERS),
STANDARDIZATION), DATA PROCESSING SYSTEMS, TIME,
COSTS, SUBROUTINES, PROGRAMMING LANGUAGES,
PROGRAMMERS, MANAGEMENT ENGINEERING (U)
IDENTIFIERS: DATA MANAGEMENT, TRANSFERRING,
COMPUTER SYSTEMS PROGRAMS, COBOL, JOVIAL
PROGRAMMING LANGUAGE, ALGOL (U)

THIS REPORT TREATS THE PROBLEM OF TRANSFERRING PROGRAMS FROM ONE OPERATING ENVIRONMENT TO ANOTHER WITH THE EXPENDITURE OF A SMALL FRACTION OF THE INITIAL PROGRAMMING DEVELOPMENT TIME AND COST. PROGRAMS CONSIDERED RANGE FROM QUITE SMALL ONES, SUCH AS ROUTINES FOR EVALUATING ARCTANGENTS, TO LARGE AND COMPLEX SYSTEMS, SUCH AS COMPILERS, DATA MANAGEMENT SYSTEMS, OR COMMAND AND CONTROL SYSTEMS. THE INITIAL AND FINAL ENVIRONMENTS MAY BE SLIGHTLY OR HIGHLY DISSIMILAR WITH RESPECT TO MACHINES, MACHINE CONFIGURATION, OR OPERATING SYSTEMS AND LANGUAGES USED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO, /ZOML1

AD-678 741 5/9 9/2
HARVARD COMPUTING CENTER CAMBRIDGE MASS

THE USE OF COMPUTERS IN HIGH SCHOOLS, (U)

AUG 68 172P CRICK, JOE E. ;STOLUROW, LAWRENCE M. ;
REPT. NO. TR-8
CONTRACT: N00014-67-A-0298

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROBLEM SOLVING, COMPUTERS), (*PROGRAMMING(COMPUTERS), *EDUCATION), TEACHING METHODS, STUDENTS, PROGRAMMING LANGUAGES, LEARNING, TIME SHARING, MATHEMATICS (U)
IDENTIFIERS: COMPUTER ANALYSIS, CAL PROGRAMMING LANGUAGE, COMPUTER AIDED INSTRUCTION, HIGH SCHOOLS (U)

THE PAPER REPORTS ON ONE HIGH SCHOOL'S EXPERIENCE WITH A PROJECT TO TEACH STUDENTS HOW TO PROGRAM AND SOLVE PROBLEMS IN MATHEMATICS USING A COMPUTER. PART I IS INTENDED AS A GENERAL GUIDE FOR ANY HIGH SCHOOL ADMINISTRATOR OR MATHEMATICS INSTRUCTOR WHO IS INTERESTED IN EXPLORING THE INSTALLATION OF A COMPUTER TERMINAL IN HIS HIGH SCHOOL AND WANTS SOME IDEA OF THE CONSIDERATIONS INVOLVED AND THE CONSEQUENCES TO EXPECT. PART II SUMMARIZES ONE STUDY TO DETERMINE THE RESULTS OF THAT PROJECT. AN EXTENSIVE APPENDIX INCLUDES COMPUTER PRINTOUT FOR A NUMBER OF PROGRAMS WRITTEN BY THE STUDENTS, A DATA PROCESSING PROGRAM TO RECORD AND TABULATE STUDENT OFF-LINE AND ON-LINE TIME, STATISTICAL CHARTS AND OTHER MATERIALS PERTAINING TO THE EVALUATION STUDY, AND COPIES OF MATERIALS GIVEN TO THE STUDENTS DURING THE COURSE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-679 136 9/2 22/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF

SPACE PROGRAMMING LANGUAGE (SPL/J6)
PROGRAMMER'S MANUAL. (U)

DESCRIPTIVE NOTE: REPT. FOR DEC 67-OCT 68,
NOV 68 202P HIRSCHFIELD,GERARD A. ;
CAREY,LEVI J. ;
CONTRACT: F04701-68-C-0135
PROJ: AF-3176
TASK: 317604
MONITOR: SAMSO TR-68-383

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INSTRUCTION MANUALS), (*SPACECRAFT, PROGRAMMING LANGUAGES), SPACEBORNE, REAL TIME, CONTROL, SPECIAL PURPOSE COMPUTERS, NAVIGATION COMPUTERS, GUIDANCE, SUBROUTINES (U)
IDENTIFIERS: SPL/J6 PROGRAMMING LANGUAGE, JOVIAL, SPACE PROGRAMMING LANGUAGE, GUIDANCE COMPUTERS (U)

THIS PROGRAMMER'S MANUAL DESCRIBES THE SPACE PROGRAMMING LANGUAGE/JOVIAL 6 (SPL/J6), A DIALECT OF THE JOVIAL LANGUAGE DESIGNED FOR SPACEBORNE SOFTWARE APPLICATIONS. THE LANGUAGE FORMS, THE NOTATION TO BE USED, AND EXAMPLES OF USAGE ARE ALL INCLUDED. THE DOCUMENT IS FOR BOTH REFERENCE AND TRAINING FOR THOSE UNFAMILIAR WITH THE LANGUAGE. HOWEVER, IT DOES ASSUME THAT THE READER IS FAMILIAR WITH THE TECHNIQUES OF COMPUTER PROGRAMMING. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-679 237 9/2
PROBE CONSULTANTS INC PHOENIX ARIZ

AUTOMATIC REPROGRAMMING WITH THE PILER SYSTEM. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.
NOV 68 24P BARBE,PENNY ;
REPT. NO. PLR-002
CONTRACT: N00014-67-C-0472
PROJ: NR-048-233

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPILERS, *PROGRAMMING(COMPUTERS)), AUTOMATIC, FLOW CHARTING, ANALYSIS, DIGITAL COMPUTERS, COMPATIBILITY, PROGRAMMING LANGUAGES (U)
IDENTIFIERS: PILER COMPUTER PROGRAM, *TRANSLATOR ROUTINES, REPROGRAMMING, INTERPRETERS, MICROPROGRAMMING (U)

THE PILER SYSTEM ACCEPTS A MACHINE LANGUAGE PROGRAM AS INPUT, AND PRODUCES A PROGRAM IN A COMPILER LANGUAGE AND A FLOW CHART OF THE PROGRAM. THE HEART OF THE SYSTEM IS AN ANALYZER WHICH DISCERNS NOT ONLY WHAT A PROGRAM IS DOING, BUT IN MANY CASES IT DETERMINES WHY CERTAIN SEQUENCES OF INSTRUCTIONS ARE PERFORMED. TO GENERALIZE THE PILER SYSTEM, THE ANALYZER IS ISOLATED FROM THE INPUT-OUTPUT PHASES OF THE TRANSLATION. THIS ALLOWS NUMEROUS INSTRUCTION INTERPRETERS TO BE WRITTEN SO THAT ANY NUMBER OF COMPUTER MODELS CAN SERVE AS THE SOURCE COMPUTER; AND IT MAKES POSSIBLE ANY NUMBER OF OUTPUT ROUTINES FOR VARIOUS COMPILER LANGUAGES. THUS A VERY LARGE COMBINATION OF SOURCE-TARGET COMPUTERS CAN USE THE SYSTEM, WHILE ONLY ONE MAJOR DEVELOPMENT EFFORT IS REQUIRED FOR THE ANALYZER. OTHER FEATURES OF THE SYSTEM INCLUDE FLAGGING, WITH REFERENCES TO THE FLOW CHART, FOR PROGRAM BLOCKS WHICH CANNOT BE ADEQUATELY EXPRESSED IN THE SPECIFIED COMPILER LANGUAGE, AND A FEEDBACK SYSTEM WHICH ALLOWS CHANGES TO THE FLOWCHART TO BE ACCEPTED AND THE PROGRAM CHANGED ACCORDINGLY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-679 271 9/2
COHEN (LEO J) ASSOCIATES INC TRENTON N J

SYSTEM AND SOFTWARE SIMULATOR, VOLUME III, (U)

DEC 68 249P COHEN,LEO J. ;
CONTRACT: DAAB09-68-C-0118

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 4, AD-679 272.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, SIMULATION), PROGRAMMING LANGUAGES, DIGITAL COMPUTERS, SPECIFICATIONS (U)
IDENTIFIERS: SYSTEM AND SOFTWARE SIMULATOR, COMPUTER SIMULATION (U)

THE SYSTEM AND SOFTWARE SIMULATOR (S3) IS A DIGITAL EVENT SIMULATOR WRITTEN IN FORTRAN IV AND DESIGNED TO PERFORM SIMULATIONS OF COMPUTER SYSTEMS HARDWARE AND SOFTWARE AND OF THE WORKLOAD BEING APPLIED TO THE SYSTEM. THIS AND THE OTHER THREE VOLUMES CONSTITUTE THE COMPLETE DOCUMENTATION AVAILABLE ON S3. VOLUME III CONTAINS DESCRIPTIONS OF THE ASSEMBLY LANGUAGE USED FOR PREPARATION OF INPUT TO S3, OF THE MACRO CAPABILITY OF THE ASSEMBLER, AND OF THE MODIFICATIONS MADE TO S3 TO PROVIDE ADDITIONAL OUTPUT DATA. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-679 401 5/2 9/2
DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA

COMPUTERS IN INFORMATION SCIENCES, VOLUME II OF III VOLUMES. (U)

DESCRIPTIVE NOTE: REPORT BIBLIOGRAPHY,
OCT 68 297P
REPT. NO. DDC-TAS-68-50

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-679 400.

DESCRIPTORS: (*INFORMATION RETRIEVAL, BIBLIOGRAPHIES), (*COMPUTERS, INFORMATION RETRIEVAL), DIGITAL COMPUTERS, ANALOG COMPUTERS, PROGRAMMING LANGUAGES, DATA PROCESSING SYSTEMS, TIME SHARING, REAL TIME, INPUT-OUTPUT DEVICES, PROGRAMMING(COMPUTERS), COMPUTER STORAGE DEVICES, DISPLAY SYSTEMS, ABSTRACTS (U)
IDENTIFIERS: *INFORMATION SCIENCES, *ON-LINE SYSTEMS, DIST, ANNOUNCEMENT BULLETINS (U)

THE UNCLASSIFIED AND UNLIMITED BIBLIOGRAPHY COMPILES REFERENCES DEALING SPECIFICALLY WITH THE ROLE OF COMPUTERS IN INFORMATION SCIENCES. THE VOLUME CONTAINS 239 ANNOTATED REFERENCES GROUPED UNDER THREE MAJOR HEADINGS: ARTIFICIAL AND PROGRAMMING LANGUAGES, COMPUTER PROCESSING OF ANALOG DATA, AND COMPUTER PROCESSING OF DIGITAL DATA. THE REFERENCES ARE ARRANGED IN ACCESSION NUMBER (AD NUMBER) SEQUENCE WITHIN EACH HEADING. FOUR INDEXES, AD-NUMERIC, CORPORATE AUTHOR/MONITORING AGENCY, PERSONAL AUTHOR, AND CONTRACT, ARE APPENDED TO FACILITATE ACCESS TO REFERENCES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML;

AD-679 603 9/2
DARTMOUTH COLL HANOVER N H DEPT OF MATHEMATICS

SLAMS; SIMPLIFIED LANGUAGE FOR ABSTRACT MATHEMATICAL STRUCTURES. (U)

DESCRIPTIVE NOTE; DOCTORAL THESIS,
JUN 68 92P WEIDENHOFER,NEAL ;
CONTRACT; F44620-68-C-0015
PROJ; AF-9744
MONITOR; AFOSR 68-2325

UNCLASSIFIED REPORT

DESCRIPTORS; (*PROGRAMMING LANGUAGES, DESIGN), DIGITAL COMPUTERS, TIME SHARING, COMPILERS, SYNTAX, THESES (U)
IDENTIFIERS; *SLAMS PROGRAMMING LANGUAGE, GE 635 COMPUTERS, LIST PROCESSING (U)

FOR MANY YEARS THE ONLY PROGRAMMING LANGUAGES AVAILABLE WERE MACHINE LANGUAGES AND LANGUAGES IN THE CLASS WITH FORTRAN, LISP AND THE LIST PROCESSING LANGUAGES THEN CAME ON THE SCENE WITH SEVERAL NEW AND POWERFUL CAPABILITIES. WITH THE NEW CAPABILITIES, CAME A NEW SYNTAX THAT, ALTHOUGH POWERFUL AND FLEXIBLE, IS DIFFICULT FOR THE NOVICE TO MASTER. SLAMS IS AN ATTEMPT TO COMBINE THE SIMPLER SYNTAX OF THE FORTRAN CLASS LANGUAGES, IN PARTICULAR, BASIC WITH SOME OF THE CAPABILITIES OF THE LIST PROCESSING LANGUAGES. THIS PAPER GIVES A BROAD DESCRIPTION OF THE USE OF SLAMS ALONG WITH SOME OF THE EXAMPLES THAT CONTRIBUTED TO ITS DESIGN. THE CURRENT, EXPERIMENTAL, IMPLEMENTATION ON THE DARTMOUTH GE-635 TIME-SHARING SYSTEM IS ALSO DESCRIBED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-679 725 9/2 12/1
CALIFORNIA UNIV LOS ANGELES DEPT OF ENGINEERING

A PROBLEM ORIENTED LANGUAGE AND A TRANSLATOR FOR PARTIAL DIFFERENTIAL EQUATIONS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
NOV 68 263P CARDENAS,A. F. ;
REPT. NO. 68-62
CONTRACT: NONR-233(52), SD-184

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARTIAL DIFFERENTIAL EQUATIONS, *PROGRAMMING LANGUAGES), COMPILERS, DESIGN, DIGITAL COMPUTERS, ALGORITHMS, NUMERICAL METHODS AND PROCEDURES, APPROXIMATION(MATHEMATICS), SIMULATION (U)
IDENTIFIERS: PL/1 PROGRAMMING LANGUAGE, PDEL(PARTIAL DIFFERENTIAL EQUATION LANGUAGE), PARTIAL DIFFERENTIAL EQUATION LANGUAGE, TRANSLATOR ROUTINES, COMPUTER SIMULATION (U)

NO HIGH LEVEL PROBLEM ORIENTED COMPUTER LANGUAGE IS AVAILABLE TO STUDY AND SOLVE CONTINUOUS SYSTEMS CHARACTERIZED BY PARTIAL DIFFERENTIAL EQUATIONS; FURTHERMORE, CONVENTIONAL METHODS TO HANDLE SUCH PROBLEMS ON A COMPUTER ARE VERY TIME CONSUMING, THEREFORE, TWO MAIN GOALS ARE ACCOMPLISHED; (1) A CONVENIENT, EASY TO LEARN AND TO USE, HIGH LEVEL PROBLEM ORIENTED LANGUAGE TO SOLVE AND STUDY PARTIAL DIFFERENTIAL EQUATION PROBLEMS IS DESIGNED; AND (2) A FEASIBLE TRANSLATOR FOR THE LANGUAGE IS DESIGNED, AND A PRELIMINARY VERSION OF IT IS CONSTRUCTED FOR A SIGNIFICANT PORTION OF THE LANGUAGE. THE TRANSLATOR IS WRITTEN IN PREPROCESSOR PL/1 AND TRANSLATES FROM PDEL INTO PL/1. THE PL/1 PROGRAM GENERATED IS THEN PROCESSED LIKE ANY OTHER PL/1 PROGRAM. THE IMPLEMENTED PDEL IS AS MUCH ON LINE AS STANDARD PL/1. THE TRANSLATOR IS MACHINE INDEPENDENT AND CAN BE USED IN ANY MACHINE WITH A STANDARD PL/1 COMPILER. THE MAIN GOAL OF THE PDEL LANGUAGE AND TRANSLATOR IS TO EASE AND SPEED UP THE TOTAL PROBLEM SOLVING TIME, MAINLY BY SIGNIFICANTLY REDUCING THE PROGRAMMING EFFORT - USUALLY THE LARGEST PORTION OF TOTAL PROBLEM SOLVING TIME. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML:

AD-680 399 9/2
COLUMBIA UNIV NEW YORK DEPT OF ELECTRICAL ENGINEERING

STUDY OF A COMPUTER FOR DIRECT EXECUTION OF LIST PROCESSING LANGUAGE. (U)

DESCRIPTIVE NOTE: FINAL REPT. DEC 65-OCT 67, JAN 68 173P BASHKOW,T. R. ;KROFT,D. ; SASSON,A. ;
REPT. NO. TR-103
CONTRACT: AF 19(628)-5664
PROJ: AF-4641, AF-8681
TASK: 464102, 868106
MONITOR: AFCRL 68-0063

UNCLASSIFIED REPORT

DESCRIPTORS: (*DIGITAL COMPUTERS, DESIGN), COMPUTER LOGIC, PROGRAMMING LANGUAGES, COMPUTER STORAGE DEVICES, DIAGRAMS, LOGIC CIRCUITS (U)
IDENTIFIERS: ASSOCIATIVE MEMORIES, LIST PROCESSING LANGUAGES, DISTRIBUTED LOGIC MEMORIES (U)

IN RECENT YEARS, LIST PROCESSING LANGUAGES HAVE BEEN FOUND USEFUL IN A VARIETY OF NON-NUMERICAL APPLICATIONS OF COMPUTERS. THESE LANGUAGES ASSUME THAT DATA IS STRUCTURED IN THE FORM OF SIMPLE OR COMPLEX LISTS (I.E. LISTS OF LISTS, ETC.) RATHER THAN IN SIMPLE VECTOR OR MATRIX-LIKE ARRAYS. CURRENT LANGUAGES ALSO ASSUME THAT SUCH LISTS ARE STORED IN CONVENTIONAL LOCATION-ADDRESSABLE MEMORIES. THIS RESEARCH DEMONSTRATES (A) THE UTILIZATION OF HARDWARE, RATHER THAN SOFTWARE, FOR THE INTERPRETATION AND EXECUTION OF LIST LANGUAGES (B) THE EMPLOYMENT OF A CONTENT-ADDRESSABLE OR ASSOCIATIVE MEMORY FOR THE STORAGE OF LISTS AND OPERATING INSTRUCTIONS OR DEFINITIONS AND (C) THE DESIGN OF TWO LIST PROCESSING LANGUAGES BASED ENTIRELY ON (A) AND (B) ABOVE. SYSTEMS DESIGNS OF THE TWO MACHINES WITH ONLY ASSOCIATIVE MEMORIES WHICH DIRECTLY INTERPRET AND EXECUTE THE TWO LIST LANGUAGES IS GIVEN. THE FIRST LANGUAGE IS DEVELOPED FROM THE BASIC DLM (I.E. DISTRIBUTED LOGIC MEMORY - AN ASSOCIATIVE MEMORY) COMMANDS; THE SECOND FROM AN EXISTING LANGUAGE IN WHICH ALL MAJOR OPERATIONS ARE DETERMINED BY DEFINITIONS STORED IN MEMORY. THE DESIGN INFORMATION IS PRESENTED IN THE FORM OF MEALY STATE DIAGRAMS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-680 782 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF

ABSTRACT FAMILIES OF PROCESSORS, (U)

MAY 68 55P ROSE,GENE F. ;
REPT. NO. SDC-TM-738/046/00, SCIENTIFIC-19
CONTRACT: F19628-67-C-0008, AF-AFOSR-1203-67
PROJ: AF-5632
TASK: 563205
MONITOR: AFCRL 68-0472

UNCLASSIFIED REPORT

DESCRIPTORS: (*DIGITAL COMPUTERS, THEORY), PROGRAMMING LANGUAGES, COMPUTER STORAGE DEVICES, AUTOMATA, ITERATIONS, THEOREMS (U)
IDENTIFIERS: AUTOMATA THEORY, AFL(ABSTRACT FAMILY OF LANGUAGES), ABSTRACT FAMILY OF LANGUAGES, AFP(ABSTRACT FAMILY OF PROCESSORS), ABSTRACT FAMILY OF PROCESSORS (U)

A 'PROCESSOR' IS A TURING-LIKE AUTOMATON WITH AUXILIARY STORAGE. AN 'ABSTRACT FAMILY' OF PROCESSORS (AFP) CONSISTS OF ALL PROCESSORS THAT USE THE STORAGE IN THE SAME WAY. PROPERTIES COMMON TO ALL AFP ARE DERIVED. FOR A FAMILY OF OPERATIONS TO BE THE OUTPUT FUNCTIONS OF SOME AFP, IT IS NECESSARY AND SUFFICIENT THAT CERTAIN WORD-SETS REPRESENTING ITS MEMBERS FORM A FULL AFL (I.E. ABSTRACT FAMILY OF LANGUAGES IN THE SENSE OF GINSBURG AND GREIBACH) CLOSED UNDER INTERSECTION AND ITERATED FINITE SUBSTITUTION. FOR A FAMILY OF WORD-SETS TO BE THE ACCEPTED LANGUAGES OF SOME AFP, IT IS NECESSARY AND SUFFICIENT THAT IT BE A FULL AFL CLOSED UNDER INTERACTION AND ITERATED FINITE SUBSTITUTION. THE SMALLEST FULL AFL OF THIS KIND IS THE FAMILY OF ALL RECURSIVELY ENUMERABLE SETS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-680 793 9/2
SYRACUSE UNIV RESEARCH CORP N Y

THEORY OF ADAPTIVE MECHANISMS, VOLUME II, SELECTED TOPICS IN AUTOMATA THEORY. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
NOV 68 145P HAMACHER,V. C. !LANGDON,G. C. !CANTARELLA,R. G. !
CONTRACT: F30602-67-C-0011
PROJ: AF-5581
TASK: 558104
MONITOR: RADC TR-68-388-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-680 792 AND VOLUME 3, AD-680 794.

DESCRIPTORS: (*DIGITAL COMPUTERS, THEORY), PROGRAMMING LANGUAGES, CONTEXT FREE GRAMMARS, COMPUTER LOGIC, DELAY CIRCUITS, LOGIC CIRCUITS, THEOREMS, ALGORITHMS, SYNCHRONIZATION(ELECTRONICS) (U)
IDENTIFIERS: *AUTOMATA THEORY, ASYNCHRONOUS CIRCUITS, THEOREM PROVING (U)

CONTENTS: LANGUAGES BETWEEN CONTEXT-FREE AND CONTEXT-SENSITIVE! ANALYSIS OF ASYNCHRONOUS CIRCUITS UNDER DIFFERENT DELAY ASSUMPTIONS! DELAY-FREE ASYNCHRONOUS CIRCUITS WITH CONSTRAINED LINE DELAYS! SOME TOPICS IN THE SYNTHESIS OF ASYNCHRONOUS CIRCUITS! AND ALGORITHMIC THEOREM PROVING. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-681 079 5/9 9/2
ENTELEK INC NEWBURYPORT MASS

COMPUTER-ASSISTED INSTRUCTION: A SURVEY OF THE LITERATURE. THIRD EDITION. (U)

DESCRIPTIVE NOTE: ANNUAL TECHNICAL REPT.,
OCT 68 152P HICKEY,ALBERT E. ;
REPT. NO. TR-8
CONTRACT: N00014-68-C-0236

UNCLASSIFIED REPORT
AVAILABILITY: PAPER COPY AVAILABLE FROM ENTELEK, INC., 42 PLEASANT ST., NEWBURYPORT, MASS. 01950, $8.00.
SUPPLEMENTARY NOTE: SEE ALSO SECOND EDITION DATED JAN 67, AD-649 335.

DESCRIPTORS: (*PROGRAMMED INSTRUCTION, *COMPUTERS), PROGRAMMING LANGUAGES, INPUT-OUTPUT DEVICES, TIME SHARING, EDUCATION, TRAINING DEVICES, SYSTEMS ENGINEERING, LEARNING, INFORMATION RETRIEVAL, BIBLIOGRAPHIES, REVIEWS (U)
IDENTIFIERS: *COMPUTER AIDED INSTRUCTION (U)

A SURVEY AND SYNTHESIS OF LITERATURE PERTAINING TO COMPUTER-ASSISTED INSTRUCTION AND PUBLISHED PRIOR TO JULY 1968 ARE GIVEN. PRINCIPAL HEADINGS INCLUDE AN OVERVIEW OF CAI, APPLICATIONS OF CAI, MAJOR CAI CENTERS, SYSTEMS, PROGRAMMING LANGUAGES, THEORY OF INSTRUCTION, STIMULUS AND PERFORMANCE FACTORS, PROGRAM GENERATION AND EVALUATION, AND ADMINISTRATION OF CAI. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-681 138 9/2 17/2
DATA DYNAMICS INC LOS ANGELES CALIF

JOVIAL EVALUATION PROJECT. (U)

DESCRIPTIVE NOTE: FINAL REPT.,
OCT 68 299P O'BRIEN,WILLIAM M. ;
CONTRACT: F19628-68-C-0110
PROJ: AF-6917
TASK: 691704
MONITOR: ESD TR-68-452

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *COMMAND + CONTROL SYSTEMS), ACCEPTABILITY, QUESTIONNAIRES, DATA PROCESSING SYSTEMS, SPECIFICATIONS (U)
IDENTIFIERS: JOVIAL PROGRAMMING LANGUAGE, EVALUATION (U)

THE RESULTS OF THE EVALUATION OF THE JOVIAL LANGUAGE AS SPECIFIED IN AIR FORCE MANUAL (AFM) 100-24 ARE CONTAINED IN THIS REPORT. THIS EVALUATION WAS BASED PRIMARILY ON EXPERIENCE OF USERS OF JOVIAL LANGUAGE DIALECTS. THE GOAL OF THIS EVALUATION WAS TO RECOMMEND DELETIONS, RETENTIONS, MODIFICATIONS, AND EXTENSIONS TO THE JOVIAL LANGUAGE BASED ON THE USERS EXPERIENCE. THE METHODOLOGY OF THE EVALUATION CONSISTED OF COLLECTING USER EXPERIENCE DATA BY MEANS OF A 'JOVIAL APPLICATION QUESTIONNAIRE' AND INTERVIEWS, AND EVALUATING THIS DATA BASED ON CRITERIA ESTABLISHED AND DOCUMENTED IN THE 'APPROACH FOR CHANGE'. THIS REPORT CONTAINS A LIST OF JOVIAL FEATURES RECOMMENDED FOR DELETION AND RETENTION AND DETAILED SPECIFICATIONS OF RECOMMENDED MODIFICATIONS AND EXTENTIONS TO THE JOVIAL LANGUAGE. IN ADDITION, THE REPORT CONTAINS THE DETAILED INTERVIEW NOTES AND QUESTIONNAIRE RESPONSES WHICH WERE THE BASIC DATA USED TO ARRIVE AT THE RECOMMENDATIONS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-681 471 9/2
DATA DYNAMICS INC LOS ANGELES CALIF

JOVIAL APPLICATION QUESTIONNAIRE. (U)

DEC 68 161P O'BRIEN,WILLIAM M. ;
PROJ: AF-6917
TASK: 691704
MONITOR: ESD TR-68-454

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-681 472

DESCRIPTORS: (*PROGRAMMING LANGUAGES, QUESTIONNAIRES), SPECIFICATIONS, DATA PROCESSING SYSTEMS, ACCEPTABILITY, COMMAND + CONTROL SYSTEMS (U)
IDENTIFIERS: JOVIAL, EVALUATION (U)

THE JOVIAL APPLICATION QUESTIONNAIRE WAS PRODUCED TO GATHER INFORMATION REGARDING JOVIAL USERS EXPERIENCE WITH THE LANGUAGE AND THE ENVIRONMENT IN WHICH JOVIAL WAS BEING USED. THIS INFORMATION IS TO BE UTILIZED TO EVALUATE JOVIAL (J3 COMPUTER PROGRAMMING LANGUAGES AS SPECIFIED IN AFM 100-24. THE QUESTIONNAIRE CONTAINS: INSTRUCTION ON HOW TO FILL OUT THE QUESTIONNAIRE; GENERAL QUESTIONS ABOUT THE APPLICATION BEING PROGRAMMED IN JOVIAL; THE HARDWARE AND OPERATING SYSTEMS BEING USED ; BACKGROUND INFORMATION; SPECIFIC QUESTIONS ABOUT EACH JOVIAL FEATURE WITH REGARD TO THE CONFORMANCE OF THE SPECIFICATION OF THE FEATURE TO AFM 100-24 AND THE EXTENT OF UTILIZATION OF THE FEATURE. IN ADDITION, THE QUESTIONNAIRE CONTAINS A DETAILED DESCRIPTION OF EACH JOVIAL FEATURE AS SPECIFIED IN AFM 100-24 AS A CONVENIENT REFERENCE TO THE USERS OF A DIFFERENT JOVIAL LANGUAGE DIALECT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-681 531 5/9 5/7
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF

A DEDUCTIVE QUESTION ANSWERER FOR NATURAL-LANGUAGE INFERENCE, (U)

NOV 68 53P SCHWARCZ,ROBERT M. ;BURGER, JOHN F. ;SIMMONS,ROBERT F. ;
REPT. NO. SDC-SP-3272
CONTRACT: F33615-67-C-1986

UNCLASSIFIED REPORT

DESCRIPTORS: (•PROGRAMMED INSTRUCTION, •LINGUISTICS), ENGLISH LANGUAGE, COMPUTERS, SEMANTICS, PROGRAMMING LANGUAGES, TIME SHARING, DATA PROCESSING SYSTEMS, ALGORITHMS (U)
IDENTIFIERS: •COMPUTER AIDED INSTRUCTION, NATURAL LANGUAGE, PROTOSYNTHEX 3 LANGUAGE PROCESSING SYSTEM, LISP PROGRAMMING LANGUAGE (U)

THE PAPER DESCRIBES AND EXEMPLIFIES IN DETAIL THE QUESTION-ANSWERING ASPECTS OF THE PROTOSYNTHEX III PROTOTYPE LANGUAGE PROCESSING SYSTEM, WHICH IS WRITTEN IN LISP 1.5 AND OPERATES ON THE Q-32 TIME-SHARING SYSTEM. THE SYSTEM'S DATA STRUCTURES AND THEIR SEMANTIC ORGANIZATION, THE DEDUCTIVE QUESTION-ANSWERING FORMALISM OF RELATIONAL PROPERTIES AND COMPLEX-RELATION-FORMING OPERATORS, AND THE QUESTION-ANSWERING PROCEDURES WHICH EMPLOY THESE FEATURES IN THEIR OPERATION ARE ALL DESCRIBED AND ILLUSTRATED. EXAMPLES OF THE SYSTEM'S PERFORMANCE AND OF THE LIMITATIONS OF ITS QUESTION-ANSWERING CAPABILITY ARE PRESENTED AND DISCUSSED. IT IS SHOWN THAT THE USE OF SEMANTIC INFORMATION IN DEDUCTIVE QUESTION ANSWERING GREATLY FACILITATES THE PROCESS, AND THAT A TOP-DOWN PROCEDURE WHICH WORKS FROM QUESTION TO ANSWER ENABLES EFFECTIVE USE TO BE MADE OF THIS INFORMATION. IT IS CONCLUDED THAT THE DEVELOPMENT OF PROTOSYNTHEX III INTO A PRACTICALLY USEFUL SYSTEM TO WORK WITH LARGE DATA BASES IS POSSIBLE BUT WILL REQUIRE CHANGES IN BOTH THE DATA STRUCTURES AND THE ALGORITHMS USED FOR QUESTION ANSWERING. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-682 110 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

AN AUTOMATIC PROGRAMMING SYSTEM FOR THE M-20 MACHINE. (U)

MAY 68 150P BABENKO,L. P. ;DOVGOPOLAYA, L. I. ;KORNIENKO,G. M. ;YUSHCHENKO,E. L. ;

REPT. NO. FTD-MT-24-90-68

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF MONO. SISTEMA AVTOMATICHESKOGO PROGRAMMIROVANIYA DLYA MASHINY M-20. KIEV. PI-156.

DESCRIPTORS: (*DIGITAL COMPUTERS, PROGRAMMING LANGUAGES), (*PROGRAMMING LANGUAGES, *COMPILERS), ALGORITHMS, TEXTBOOKS, COMPUTER LOGIC, USSR (U)
IDENTIFIERS: M-20 COMPUTERS(USSR), TRANSLATIONS (U)

THE BOOK DESCRIBES IN DETAIL AN ALGORITHMIC ADDRESS LANGUAGE WHICH IS CONVENIENT FOR DESCRIBING COMPUTATIONAL AND COMPLEX INFORMATION-LOGICAL PROCESSES; IT ALSO DESCRIBES A CORRESPONDING PROGRAMMING PROGRAM WHICH WAS DEVELOPED IN THE INSTITUTE OF CYBERNETICS OF THE ACADEMY OF SCIENCES OF THE UKRAINIAN SSR FOR THE DOMESTIC; SERIALLY-PRODUCED M-20 MACHINE. THE METHOD OF USING THE PP (PROGRAMMING PROGRAM) IS EXPOUNDED AND EXAMPLES OF PROGRAMMING ARE GIVEN. THE USE OF A NEW SYSTEM OF AUTOMATIC PROGRAMMING PERMITS INCREASING THE CALCULATION RATE IN THE ELECTRONIC COMPUTER BY 10-15 TIMES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-682 305 9/2
AEROSPACE CORP SAN BERNARDINO CALIF SAN BERNARDINO OPERATIONS

J-3, PL/1 AND A DATA BASE. (U)

DESCRIPTIVE NOTE: REPT. FOR AUG-NOV 68,
FEB 69 27P CALLENDER,E. DAVID ;RHODUS, N. WAYNE ;
REPT. NO. TR-0200(S9990)-4
CONTRACT: F04701-68-C-0200
MONITOR: SAMSO TR-69-25

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, PERFORMANCE(ENGINEERING)), COMPILERS, COMMAND + CONTROL SYSTEMS, CORRELATION TECHNIQUES, DIGITAL COMPUTERS (U)
IDENTIFIERS: PL/1 PROGRAMMING LANGUAGE, JOVIAL, IBM 360/67 COMPUTERS, DATA MANAGEMENT (U)

THE REPORT ADDRESSES TWO PROBLEMS. THE FIRST IS TO PROVIDE AN EVALUATION OF THE RELATIVE MERITS OF THE PROGRAMMING LANGUAGES PL/1 AND JOVIAL, AS CONSTITUTED BY THE VERSION 4 AND J-3 COMPILERS, WITH PARTICULAR EMPHASIS ON ADS COMMAND AND CONTROL APPLICATIONS. IT IS CONCLUDED THAT WHILE BOTH LANGUAGES ARE QUITE ADEQUATE, PL/1 IS MUCH THE BETTER AND A MORE POWERFUL LANGUAGE THAN JOVIAL. THE SECOND PROBLEM IS CONCERNED WITH ADS DATA MANAGEMENT WITHIN AN IBM OS/360 OPERATING SYSTEM ENVIRONMENT. THE PROPOSED J-4 COMPOOL CAPABILITY IS FELT TO BE QUITE GOOD AND GENERAL. IT IS POSSIBLE, IN A STRAIGHT FORWARD MANNER, TO PROVIDE AN EQUIVALENT CAPABILITY BOTH IN PL/1 AND AN EXTENSION OF J-3 WITHIN OS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-682 339 9/2
RCA LABS PRINCETON N J

AUTOMATIC QUESTION-ANSWERING OF ENGLISH-LIKE QUESTIONS ABOUT ARITHMETIC. (U)

NOV 68 47P KOCHEN, MANFRED ;
REPT. NO. SCIENTIFIC-5
CONTRACT: F44620-68-C-0012
PROJ: AF-9769
TASK: 976905
MONITOR: AFOSR 69-0272TR

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO SCIENTIFIC REPT. NO. 3, AD-670 545.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, ENGLISH LANGUAGE), (*PROGRAMMING(COMPUTERS), NUMBER THEORY), ARTIFICIAL INTELLIGENCE, FLOW CHARTING, MACHINE TRANSLATION, ALGORITHMS, PROBLEM SOLVING, DATA PROCESSING SYSTEMS, SYNTAX (U)
IDENTIFIERS: ARITHMETIC (U)

THE REPORT DESCRIBES AN ENGLISH-LIKE SOURCE LANGUAGE OF QUESTIONS AND A PROCEDURE WHEREBY A COMPUTER PROGRAM CAN ANALYZE ANY QUESTION IN THAT LANGUAGE AND PRODUCE A PROGRAM THAT SEARCHES FOR THE ANSWER. THE SOURCE LANGUAGE IS AN EXTENSION OF A PREVIOUSLY DEVELOPED SOURCE LANGUAGE WHICH CONSISTED OF QUESTIONS ABOUT SIMPLE DIAGRAMS. THE EXTENDED LANGUAGE ADMITS QUESTIONS INVOLVING COUNTING AND ARITHMETIC. THIS EXTENSION IS A SECOND CONSTRUCTIVE STEP TOWARD EXPLORING THE FUNDAMENTAL LIMITS OF HOW FAR SUCH A SOURCE LANGUAGE CAN BE EXTENDED TOWARD ENCOMPASSING ALL THE ANSWERABLE QUESTIONS THAT CAN BE POSED IN ENGLISH AND ANSWERED BY A COMPUTER. THE USE OF SYNTACTIC TRANSFORMATIONS TO EXPRESS RELATIONS (E.G., THE COMMUTATIVE LAW) AND DEFINITIONS (E.G., PRIMENESS) IS OF SPECIAL INTEREST. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-682 358 9/2
CALIFORNIA UNIV BERKELEY

REFERENCE MANUAL FOR THE TIME-SHARING EXECUTIVE. (U)

DESCRIPTIVE NOTE: REVISED ED.,
NOV 68 29P DURHAM,L. ;ETHERTON,M. ;
REPT. NO. R-22
CONTRACT: SD-185

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPERSEDES REPT. NO. R-22 DATED 25 JAN 68, AD-667 635. SEE ALSO AD-682 359.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, PROGRAMMING LANGUAGES), (*TIME SHARING, INSTRUCTION MANUALS), INPUT-OUTPUT DEVICES, TELETYPE SYSTEMS (U)
IDENTIFIERS: GENIE PROJECT (U)

THE PROJECT GENIE OPERATING SYSTEM IS A MEDIUM SCALE MULTI-ACCESS COMPUTATIONAL SYSTEM WHICH IMPLEMENTS A POWERFUL AND COMPLEX USER MACHINE. IT IS THE ROLE OF THE COMMAND LANGUAGE (HERE CALLED THE EXECUTIVE) TO PROVIDE SOME TOOLS TO CONTROL THIS USER MACHINE, AND TO PROVIDE THOSE SERVICES WHICH USERS HAVE COME TO EXPECT OF CONVERSATIONAL SYSTEMS. THIS DOCUMENT DESCRIBES THE SYSTEM COMMAND LANGUAGE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-682 398 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

PROGRAMMING (SECOND EDITION, REVISED AND EXPANDED). (U)

JUL 68 453P KRINITSKII,N. A. ;MIRONOV, G. A. ;FROLOV,G. D. ;
REPT. NO. FTD-HT-23-139-68

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF MONO. PROGRAMMIROVANIE. IZDANIE VTOROE, PERERABOTANNOE I DOPOLNENNOE. MOSCOW, 1966 P1-599.

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), HANDBOOKS), (*DIGITAL COMPUTERS, USSR), PROGRAMMING LANGUAGES, MATHEMATICAL LOGIC, ALGORITHMS, TEXTBOOKS (U)
IDENTIFIERS: ALGOL PROGRAMMING LANGUAGE, URAL 4 COMPUTERS, MINSK 2 COMPUTERS, RAZDAN 2 COMPUTERS, DNEPR COMPUTERS, URAL 2 COMPUTERS, SETUN COMPUTERS, STRELA COMPUTERS, M-20 COMPUTERS(USSR), BESM 2 COMPUTERS, TRANSLATIONS (U)

THE HANDBOOK CONTAINS A BRIEF REVIEW OF THE PRINCIPLES AND THEORETICAL FUNDAMENTALS OF PROGRAM-CONTROLLED COMPUTERS. VARIOUS SERIES OF SOVIET ELECTRONIC DIGITAL COMPUTERS ARE DESCRIBED. GENERAL INFORMATION ON ALGORITHMIC LANGUAGES AND THE ALGOL INTERNATIONAL ALGORITHMIC LANGUAGE AS WELL AS MODERN COMPUTERS SUCH AS URAL-4, MINSK-2, M-20, RAZDAN-2, AND THE DNEPR UNIVERSAL CONTROL COMPUTER IS PRESENTED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML!

AD-682 793 9/2 5/7
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

PROGRAMS FOR THE 'MINSK-2' DIGITAL COMPUTER; A MALGOL TRANSLATOR AND INSTRUCTIONS FOR ITS USE. (U)

JUN 68 117P KOTLI,M. ;VIIL,A. ; RAKHENDI,M. ;
REPT. NO. FTD-HT-23-68-68

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF MONO. PROGRAMMY DLYA ETSVM 'MINSK-2', TALLIN, 1966 NS PI-178, BY E. PENTECOST.

DESCRIPTORS: (*DIGITAL COMPUTERS, MACHINE TRANSLATION), DATA STORAGE SYSTEMS, COMPUTER PROGRAMS, USSR, PROGRAMMING LANGUAGES (U)
IDENTIFIERS: TRANSLATIONS (U)

THE REPORT PRESENTS A TRANSLATION SYSTEM OF PROGRAMS FOR THE MINSK-2 DIGITAL COMPUTER FROM THE MALGOL LANGUAGE. FOR THE FIRST FOUR MONTHS OF USE, APPROXIMATELY 40 PROBLEMS OF DIFFERENT VOLUME AND CHARACTER WERE SOLVED; CERTAIN NON-PRINCIPLE ERRORS WERE FOUND AND CORRECTED AND ADDITIONS WERE MADE WHICH WERE DESIGNED TO FACILITATE USE OF THE TRANSLATOR. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-683 770 9/2
RAND CORP SANTA MONICA CALIF

SOVIET CYBERNETICS: RECENT NEWS ITEMS, VOLUME 3, NUMBER 1, 1969, (U)

JAN 69 75P MCDONALD,DOROTHY ;HOLLAND, WADE B. ;
REPT. NO. RM-6000/1-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPT. NO. 24, AD-680 741.

DESCRIPTORS: (*COMPUTERS, USSR), CYBERNETICS, DIGITAL COMPUTERS, PROGRAMMING LANGUAGES, PERIODICALS, FLUIDICS, POPULATION, CONTROL SYSTEMS, INFORMATION RETRIEVAL, SPEECH RECOGNITION (U)

THE JANUARY 1969 SC:RNI, THE FIRST ISSUE TO APPEAR IN THE RM SERIES, FEATURES AN ARTICLE BY MINSK FACTORY DIRECTOR V. GOL'DBERG SUGGESTING THAT SOVIET COMPUTER PRODUCERS BE MADE RESPONSIBLE FOR THE INTRODUCTION, INSTALLATION, SERVICING, AND BASIC SOFTWARE OF THEIR PRODUCTS (AT PRESENT, SYSTEMS ARE OFTEN SHIPPED UNASSEMBLED). ANOTHER ARTICLE DISCUSSES REQUIREMENTS FOR HIGH-LEVEL COMPILER LANGUAGES FOR ENGINEERING PROBLEMS. ALTHOUGH 60 NEW JOURNALS HAVE BEEN ADDED SINCE 1966 AND OLDER ONES ENLARGED, THE BACKLOG OF UNPUBLISHED RESULTS GROWS AND LEAD TIME AFTER SUBMISSION AVERAGES 18 MONTHS. ACADEMY NATURAL-SCIENCE JOURNALS WILL GIVE AT LEAST ONE-FOURTH OF THEIR SPACE TO BRIEF COMMUNICATIONS AND ANNOTATIONS OF REPORTS THAT ARE NOT PRINTED BUT DEPOSITED FOR REQUEST COPYING; INSTITUTES ARE URGED TO GIVE AUTHORS EDITORIAL HELP AND TO DISTRIBUTE REPRINTS. ALSO INCLUDED: SPECIFICATIONS FOR PROCESS CONTROL COMPUTERS THAT ARE NOT MET BY PRESENT SOVIET EQUIPMENT; A CUTAWAY VIEW OF THE SOYUZ-3 SPACECRAFT; GEORGIAN RESEARCH ON VOICE RECOGNITION; ARMENIAN DEVELOPMENT OF PNEUMONIC (AIRJET) CONTROLS; DEMOGRAPHIC FORECASTING IN THE UKRAINE; BIOGRAPHICAL SKETCH OF RADIO SCIENTIST V. A. KOTEL'NIKOV. THE ACADEMY OF SCIENCES HAS TRANSLATED INTO RUSSIAN THE LATEST EDITION OF THE MANUAL FOR THE NORWEIGAN SIMULATION LANGUAGE, SIMULA. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-684 107 9/2
MARYLAND UNIV COLLEGE PARK COMPUTER SCIENCE CENTER

RSVP-RELATIONAL STRUCTURE VERTEX PROCESSOR, (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAR 69 81P LIEBERMAN,ROBERT N. ;
REPT. NO. TR-69-87
CONTRACT: NONR-5144(00)

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), INFORMATION RETRIEVAL), DATA STORAGE SYSTEMS, COMPUTER PROGRAMS, PROGRAMMING LANGUAGES, DATA PROCESSING SYSTEMS, SEARCH THEORY (U)
IDENTIFIERS: DATA MANAGEMENT, LIST PROCESSING LANGUAGES (U)

THE REPORT DESCRIBES A GENERALIZED SYSTEM FOR 'STRUCTURING' DATA IN A COMPUTER. IT SEPARATES THE STRUCTURE, I.E., THE RELATIONSHIPS BETWEEN INDIVIDUAL 'PIECES' OF DATA, FROM THE ACTUAL DATA ITSELF. THE FORMER ARE REPRESENTED BY A SYSTEM OF 'ATOMS' AND 'POINTERS', ATOMS ARE ADDRESSABLE BOTH BY ABSOLUTE CORE ADDRESSES AND BY UNIQUE ATOM NUMBERS, SO THAT THEY CAN BE RAPIDLY ACCESSED IN CORE MEMORY, AND ALSO STORED IN OR RETRIEVED FROM AUXILIARY STORAGE ON AN INDIVIDUAL BASIS, AS DETERMINED BY BOTH SIZE AND FREQUENCY OF USAGE. IN SEARCHING THE STRUCTURE, THE ATOMS ARE MARKED IN ORDER TO PERMIT SEVERAL SIMULTANEOUS INDEPENDENT SEARCHES AND TO KEEP TRACK OF THE STATUS OF EACH SEARCH. A CONVERSATIONAL IMPLEMENTATION OF THE SYSTEM ON A UNIVAC 1108 (UNDER EXEC 8) IS BRIEFLY DESCRIBED. EXAMPLES ARE GIVEN OF ITS USE TO STORE PROPERTIES OF THE RELATIONSHIPS AMONG REGIONS IN A MAP. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-684 687 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

SIMULATION OF DISCRETE AUTOMATA ON GENERAL-PURPOSE COMPUTERS. (U)

SEP 68 37P UTKIN,A. A. ;
REPT. NO. FTD-MT-24-320-68

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF VYCHISLITELNYE SISTEMY (USSR) N25 P45-73 1966.

DESCRIPTORS: (*DIGITAL COMPUTERS, AUTOMATA), SIMULATION, PROGRAMMING LANGUAGES, USSR (U)
IDENTIFIERS: COMPUTERIZED SIMULATION, TRANSLATIONS (U)

THE TERM 'SIMULATION' IS CONSTRUED AS A PROCESS WHERE THE OBJECT OF INVESTIGATION IS THE BEHAVIOR OF A DISCRETE AUTOMATON AND THE MEANS OF INVESTIGATION IS A GENERAL-PURPOSE COMPUTER. THE SIMULATION OF DISCRETE AUTOMATA ON GENERAL-PURPOSE COMPUTERS IS REGARDED AS AN AUTONOMOUS RESEARCH ORIENTATION INTENDED TO ACCELERATE THE DESIGN OF DIGITAL DEVICES. THE METHOD FOR SIMULATING DISCRETE AUTOMATA IS CHARACTERIZED BY THREE COMPONENTS: AN INPUT LANGUAGE, I.E., A MEANS OF DESCRIBING THE STRUCTURE AND BEHAVIOR OF DISCRETE AUTOMATA; A COLLECTION OF PROGRAMS ASSURING THE REPRODUCTION OF THE BEHAVIOR OF DISCRETE AUTOMATA ON ALL-PURPOSE COMPUTERS (THE SIMULATING SYSTEM); THE METHODOLOGY OF RESEARCH INTO DISCRETE AUTOMATA, I.E., TECHNIQUES OF SPECIFYING THEIR INPUT SEQUENCES AND ANALYZING THEIR OUTPUT SEQUENCES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-684 706 9/2
MITRE CORP MCLEAN VA

SURVEY OF MANAGEMENT INFORMATION SYSTEMS AND THEIR LANGUAGES. (U)

DESCRIPTIVE NOTE: DATA MANAGEMENT SERIES NO. 1, MAY 68 32P FRY, JAMES P. ;GOSDEN, JOHN A. ;
REPT. NO. MTP-313
CONTRACT: AF 19(628)-5165

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO DATA MANAGEMENT SERIES NO. 2, AD-684 707.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, STATE-OF-THE-ART REVIEWS), PROGRAMMING LANGUAGES, DIGITAL COMPUTERS (U)
IDENTIFIERS: *DATA MANAGEMENT (U)

SIGNIFICANT DATA MANAGEMENT SYSTEMS AVAILABLE ON THIRD-GENERATION HARDWARE ARE CONSIDERED, THREE TYPES OF USER INTERFACE ARE DISCUSSED: OWN DML (DATA MANAGEMENT LANGUAGE) SYSTEMS, FORMS CONTROLLED SYSTEMS AND POL EMBEDDED SYSTEMS. TYPICAL SYSTEMS WITHIN EACH CATEGORY ARE PRESENTED AND THEIR SALIENT FEATURES ARE HIGHLIGHTED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO, /ZOML1

AD-684 909 9/2
RESEARCH ANALYSIS CORP MCLEAN VA

RACMAP: AN EXTENSION OF THE IBMAP MACRO PROCESSOR, A PROGRAMMER'S REFERENCE MANUAL, (U)

DESCRIPTIVE NOTE: TECHNICAL PAPER,
MAR 69 37P WILLIAMS,JOHN S. ;
REPT. NO. RAC-TP-343
CONTRACT: DA-44-188-ARO-1
PROJ: AROD-008112

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INSTRUCTION MANUALS), DIGITAL COMPUTERS, CONTROL SEQUENCES (U)
IDENTIFIERS: MAP PROGRAMMING LANGUAGE, IBM 7040 COMPUTERS, ASSEMBLY LANGUAGES (U)

AN EXTENSION TO THE MACRO-PROCESSING FACILITIES OF THE 7040 IBMAP LANGUAGE IS DESCRIBED, THE NEW FEATURES AFFORD ADDITIONAL CAPABILITY IN THE HANDLING OF CHARACTER STRINGS, THE SELECTION OF MACRO PARAMETERS, AND THE TRANSFERRING OF CONTROL WITHIN MACROS. IN ADDITION, FEATURES HAVE BEEN INTRODUCED THAT PERMIT DECISION MAKING DURING THE CONSTRUCTION OF MACRO DEFINITIONS. AS A RESULT, THE ABILITY OF MACROS TO DEFINE OTHER MACROS IS CONSIDERABLY EXTENDED. TAKEN TOGETHER, THE RACMAP FEATURES SIGNIFICANTLY INCREASE THE RANGE OF APPLICATIONS THAT MAY BE HANDLED BY MACRO PROCESSING. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-685 527 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

COMPUTER SYSTEMS (SELECTED ARTICLES), (U)

OCT 68 28P POSPELOV,D. A. ;ROMANOV,A. K. ;ZELENTSOV,B. P. ;MAKAROV,G. P. ;KLYKOV, YU. I. ;
REPT. NO. FTD-MT-24-304-68

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF MONO. SIMPOZIUM PO VYCHISLITELNYM SISTEMAN, NOVOSIBIRSK, MAY 66. TRUDY (SYMPOSIUM ON COMPUTER SYSTEMS, NOVOSIBIRSK, MAY 66. TRANSACTIONS), NOVOSIBIRSK, 1967 P56-62, 79-84.

DESCRIPTORS: (*DIGITAL COMPUTERS, MULTIPLE OPERATION), RELIABILITY(ELECTRONICS), PROGRAMMING LANGUAGES, CONTROL, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

CONTENTS: THEORETICAL PROBLEMS ASSOCIATED WITH THE JOINT OPERATION OF STANDARD COMPUTERS AS A SINGLE SYSTEM; ESTIMATE OF PERFORMANCE INDICES OF ONE COMPUTER SYSTEM; AND MODEL LANGUAGE FOR CONTROLLING COMPUTING MEDIUM. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO, /ZOML1

AD-685 771 9/2 14/2
BATTELLE MEMORIAL INST COLUMBUS OHIO COLUMBUS LABS

THE COMPILER FOR THE PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT (PLACE). SUPPLEMENT 1. ADAPTED 'PLACE' COMPILER FOR THE IBM TYPE 360 DIGITAL COMPUTER. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 DEC 67-1 DEC 68, JAN 69 116P CAMPBELL, ROBERT L. ;
CONTRACT: F33615-68-C-1161
PROJ: AF-8174
MONITOR: AFAPL TR-68-27-SUPPL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO PART 1, AD-670-842 AND PART 2, AD-670 843.

DESCRIPTORS: (*CHECKOUT EQUIPMENT, *PROGRAMMING LANGUAGES), (*COMPILERS, CHECKOUT EQUIPMENT), AUTOMATIC, TEST EQUIPMENT, DIGITAL COMPUTERS (U)
IDENTIFIERS: PLACE PROGRAMMING LANGUAGE, IBM 360 COMPUTERS, *PLACE(PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT) (U)

PLACE IS A LANGUAGE THAT CAN BE USED BY ENGINEERS TO PROGRAM A VARIETY OF AUTOMATIC TEST EQUIPMENT. ASSOCIATED WITH THE PLACE LANGUAGE IS A COMPUTER PROGRAM CALLED THE PLACE PROCESSOR WHICH OPERATES ON THE IBM 7094 COMPUTER. THIS PROGRAM, WHICH FORMS THE MAJOR PORTION OF THE COMPILER FOR A CHECKOUT SYSTEM, HAS BEEN CONVERTED FOR OPERATION ON THE IBM SYSTEM/360 COMPUTER. THIS REPORT IS PRIMARILY DEVOTED TO A DESCRIPTION OF THE MODIFICATIONS PERFORMED ON THE PLACE PROCESSOR DURING CONVERSION FOR OPERATION ON THE IBM SYSTEM/360 COMPUTER. THIS REPORT COMPRISES SUPPLEMENT NO. 1 FOR TECHNICAL REPORT AFAPL-TR-68-27 ENTITLED 'THE COMPILER FOR THE PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT (PLACE)', AND ERRATA SHEETS THAT REFLECT THE MODIFICATIONS MADE TO THE PLACE PROCESSOR DURING CONVERSION TO THE IBM SYSTEM/360 ARE INCLUDED IN THIS REPORT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-687 840 9/2 5/7
SYRACUSE UNIV N Y

LARGE SCALE INFORMATION PROCESSING SYSTEM, VOLUME I. COMPILER, NATURAL LANGUAGE, AND INFORMATION PROCESSING. (U)

DESCRIPTIVE NOTE: ANNUAL REPT. NO. 1, 16 JUL 67-15 JUL 68,
APR 69 142P PETERSON,PHILIP L. ;CARNES, ROBERT ;REID,ILENE ;FENG,EDWARD T. ;SARGENT, ROBERT G. ;
CONTRACT: F30602-68-C-0013
PROJ: AF-5581
TASK: 558102
MONITOR: RADC TR-68-401-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-687 841.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, *SEMANTICS), (*PROGRAMMING LANGUAGES, *INFORMATION RETRIEVAL), COMPILERS, DIGITAL COMPUTERS, ENGLISH LANGUAGE (U)
IDENTIFIERS: NATURAL LANGUAGE (U)

THE REPORT COVERS (1) SEMANTICS AND GRAMMAR, (2) CONTEXT THEORY OF MEANING, (3) INFORMATION RETRIEVAL, AND (4) TEXT PROCESSING AND MANIPULATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-687 841 9/2
SYRACUSE UNIV N Y

LARGE SCALE INFORMATION PROCESSING SYSTEM. VOLUME II. SYSTEMS: THEORY, ADVANCED CONCEPTS AND DESIGNS. (U)

DESCRIPTIVE NOTE: ANNUAL REPT. NO. 1, 16 JUL 67-15 JUL 69,
APR 69 88P PETERSON,PHILIP L. ;CARNES, ROBERT ;REID,ILENE ;O'CONNELL,EDWARD J. ; ATHERTON,PAULINE ;
CONTRACT: F30602-68-C-0013
PROJ: AF-5581
TASK: 558102
MONITOR: RADC TR-68-401-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-687 840 AND VOLUME 3, AD-687 842.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, *PROGRAMMING LANGUAGES), DIGITAL COMPUTERS, ALGORITHMS, COMPILERS, TIME SHARING, THEORY, DESIGN (U)
IDENTIFIERS: APL/360 TERMINAL SYSTEM (U)

THE IMPACT OF AN INTERPRETIVE IMPLEMENTATION OF A LANGUAGE HAVING A NUMBER OF POWERFUL PRIMATIVE OPERATORS UPON LANGUAGE PROCESSORS FOR INTERACTIVE TERMINAL COMPUTING SYSTEMS IS DISCUSSED. AFTER PRESENTING A COMPARISON OF THE ATTRACTIVE FEATURES OF COMPILERS AND INTERPRETERS, THE NATURE OF IBM'S APL/360 LANGUAGE IS DISCUSSED IN DETAIL NECESSARY TO ILLUSTRATE THE COMPARISON OF FEATURES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML/

AD-688 805 12/1 13/8 14/2 7/1
LOUISIANA STATE UNIV BATON ROUGE COLL OF ENGINEERING

APPLICATION OF SIMULATION TO THE GENERALIZED OPTIMIZATION OF PROCESS CONTROL SYSTEMS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JUN 69 19P MURRILL,PAUL W. ;SMITH,
CECIL L. ;
REPT. NO. THEMIS LSU-T-TR-15
CONTRACT: F44620-68-C-0021
PROJ: AF-9749
TASK: 974901
MONITOR: AFOSR 69-1424TR

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON PROJECT THEMIS: STUDIES IN DIGITAL AUTOMATA.

DESCRIPTORS: (*ADAPTIVE CONTROL SYSTEMS, SIMULATION), (*PRODUCTION CONTROL, OPTIMIZATION), CHEMICAL ENGINEERING, PROGRAMMING LANGUAGES, DIGITAL COMPUTERS, ANALOG COMPUTERS, DIFFERENTIAL EQUATIONS, AUTOMATION, FEEDBACK (U)
IDENTIFIERS: FEEDBACK CONTROL, CONTROL THEORY, PROCESS CONTROL, COMPUTERIZED SIMULATION, DIGITAL AUTOMATA, THEMIS PROJECT, FORTRAN (U)

FOR THE PAST FIVE YEARS, THE AUTHORS HAVE BEEN ENGAGED IN VARIOUS ASPECTS OF THE DESIGN OF CONTROL SYSTEMS. VIRTUALLY ALL OF THE STUDIES REQUIRED, IN ONE WAY OR ANOTHER, THE SOLUTION TO THE DIFFERENTIAL EQUATIONS DESCRIBING THE CONTROLLER AND THE SYSTEM BEING CONTROLLED. THIS ASPECT OF THE PROBLEM FALLS INTO THE GENERAL AREA OF SIMULATION. THIS PAPER DESCRIBES THE EXPERIENCES OF THE AUTHORS IN THEIR USE OF VARIOUS SIMULATION TECHNIQUES, INCLUDING DIGITAL SIMULATION LANGUAGES, FORTRAN, AND THE ANALOG COMPUTER. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-689 279 9/2 20/7
NEW YORK UNIV BRONX LAB FOR ELECTROSCIENCE RESEARCH

LINGUISTIC SPECIFICATION AND ANALYSIS OF CLASSES OF LINE PATTERNS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
APR 69 194P FEDER,JEROME
REPT. NO. TR-403-2
CONTRACT: AF-AFOSR-1367-68
PROJ: AF-9769
TASK: 976902
MONITOR: AFOSR 69-1505TR

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *PATTERN RECOGNITION), (*BUBBLE CHAMBERS, DATA PROCESSING SYSTEMS), GEOMETRIC FORMS, CODING, PHRASE STRUCTURE GRAMMARS, CONTEXT FREE GRAMMARS, AUTOMATA, PROGRAMMING(COMPUTERS), COMPILERS, PHOTOGRAPHS, GRAPHICS, THESES (U)
IDENTIFIERS: COMPUTER GRAPHICS (U)

PICTORIAL PATTERNS CAN BE CONSIDERED AS STATEMENTS IN A TWO-DIMENSIONAL LANGUAGE. IN THE REPORT, A VARIETY OF LANGUAGES COMPOSED OF SETS OF ENCODED GEOMETRIC CURVES ARE CLASSIFIED IN THE CHOMSKY LANGUAGE HIERARCHY. THE RELATIONSHIPS BETWEEN CLASSES OF LANGUAGES AND CLASSES OF AUTOMATA THEN PERMIT BOUNDS ON THE TIME AND MEMORY REQUIRED TO RECOGNIZE THE PATTERNS TO BE DETERMINED. THE PHRASE-STRUCTURE GRAMMAR SCHEME FOR STRING LANGUAGES IS EXTENDED BY PERMITTING SYMBOLS TO HAVE AN ARBITRARY NUMBER OF 'ATTACHING POINTS,' AND CLASSES OF THE EXTENDED LANGUAGES ARE DEFINED. AN ALGORITHM FOR PARSING A 'CONTEXT-FREE' LANGUAGE OF THIS TYPE ACCORDING TO A FORMAL LANGUAGE DESCRIPTION IS INCORPORATED INTO A TABLE-DRIVEN PATTERN ANALYZER. THIS DEVICE IS AN EXTENSION OF THE IDEA OF A TABLE-DRIVEN COMPILER AND IS ABLE TO PERFORM A BROAD RANGE OF PATTERN ANALYSIS TASKS ON WIDELY DIFFERING CLASSES OF LINE PATTERNS. THE CLASS OF PATTERNS AND METHOD FOR STRUCTURALLY BREAKING DOWN THE PATTERNS CAN BE CHANGED SIMPLY BY CHANGING THE ENTRIES IN THE PROGRAM SYNTAX TABLES. THE TABLE-DRIVEN PATTERN ANALYZER IS APPLIED TO THE RECOGNITION OF EVENTS IN BUBBLE CHAMBER PHOTOGRAPHS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-689 726 15/7 12/2 9/2
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

A REAL TIME GAMING SYSTEM. (U)

DESCRIPTIVE NOTE: MASTER'S THESIS,
DEC 68 137P SINGER,EDWARD ANTHONY , JR1

UNCLASSIFIED REPORT

DESCRIPTORS: (*WAR GAMES,
PROGRAMMING(COMPUTERS)),
(*PROGRAMMING(COMPUTERS), REAL TIME),
COMPILERS, PROGRAMMING LANGUAGES, DIGITAL
COMPUTERS, GAME THEORY, THESES (U)
IDENTIFIERS: RTGS CONTROL PROGRAM COMMAND LANGUAGE,
IBM 360 COMPUTERS (U)

A SYSTEM IS PROPOSED WHICH WILL SUPPORT COMPUTER GAMING IN REAL-TIME. THIS SYSTEM WILL, WHEN COMBINED WITH THE USER'S CONTROL PROGRAM, MONITOR ALL OF THE FUNCTIONS NECESSARY TO PROVIDE REAL-TIME MAN/MACHINE INTERACTION WITH THE GAME. THE FORMAL DEFINITION OF A PROGRAMMING LANGUAGE (RTGS CONTROL PROGRAM COMMAND LANGUAGE) IS GIVEN1 THIS LANGUAGE, SUPPLEMENTED BY FORTRAN IV AND IBM OS/360 ASSEMBLER LANGUAGE IS USED FOR CODING THE USER'S CONTROL PROGRAM. PLANS FOR IMPLEMENTATION ON AN IBM SYSTEM/360 MODEL 67 ARE DISCUSSED AND A SAMPLE PROGRAM IS GIVEN.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-689 862 9/2
MICHIGAN UNIV ANN ARBOR

AN ASSEMBLY LANGUAGE SYSTEM FOR DEC MINICOMPUTERS. (U)

MAY 69 68P POWERS,V. MICHAEL ;MILLS, DAVID L. ;LAURANCE,NEAL L. ;
REPT. NO. MEMO-20
CONTRACT: DA-49-083-OSA-3050, ARPA ORDER-716
PROJ: ORA-07449

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON PROJ. CONCOMP,

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DIGITAL COMPUTERS), COMPILERS, PROGRAMMING(COMPUTERS), HANDBOOKS (U)
IDENTIFIERS: ASSEMBLY LANGUAGES, ASSEMBLER ROUTINES, PDP 1 COMPUTERS, PDP 5 COMPUTERS, PDP 7 COMPUTERS, PDP 8 COMPUTERS, PDP 9 COMPUTERS, CONCOMP PROJECT (U)

THE MEMORANDUM DESCRIBES THE PDP-5/8 AND THE PDP-7/9 LANGUAGE ASSEMBLERS AND THE PDP-8 LINK-EDITOR/LOADER WHICH ARE CURRENTLY RUNNING ON THE DUPLEX IBM 360/67 SYSTEM AT THE COMPUTING CENTER OF THE UNIVERSITY OF MICHIGAN UNDER MTS (MICHIGAN TERMINAL SYSTEM). THE PROGRAMS ARE WRITTEN IN IBM SYSTEM/360 OS ASSEMBLY LANGUAGE, LEVEL G, THE MEMORANDUM SERVES BOTH AS A MANUAL FOR THE SYSTEM USER AS WELL AS A REPORT ON THE SYSTEM DEVELOPMENT. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML;

AD-690 599 5/9 9/2
PITTSBURGH UNIV PA LEARNING RESEARCH AND DEVELOPMENT CENTER

STUDIES RELATED TO COMPUTER-ASSISTED INSTRUCTION. (U)

DESCRIPTIVE NOTE: SEMI-ANNUAL PROGRESS REPT, 1 OCT 68-31 MAR 69,
MAY 69 27P GLASER, ROBERT ;
CONTRACT: NONR-624(18)

UNCLASSIFIED REPORT

DESCRIPTORS: (•PROGRAMMED INSTRUCTION, COMPUTERS), (•TEACHING METHODS, ANALYSIS), REACTION(PSYCHOLOGY), REFLEXES, PROGRAMMING LANGUAGES, RETENTION, ATTITUDES, AUTOMATA, LINGUISTICS (U)
IDENTIFIERS: •COMPUTER AIDED INSTRUCTION, SKOOLBOL 1 PROGRAMMING LANGUAGE (U)

THE PARAMETERS AND CONCOMITANTS OF RESPONSE LATENCY IN A DRILL AND PRACTICE TASK WERE INVESTIGATED. IT WAS FOUND THAT VARIABILITY IN LATENCY MEASURES COULD BE REDUCED BY THE USE OF SELF-PACING PROCEDURES BUT NOT BY THE DETAILED ANALYSIS OF LATENCY INTO SEPARATE COMPONENTS. PRELIMINARY RESULTS ON THE RELATIONSHIP BETWEEN LATENCY DURING OVERLEARNING AND RETENTION SHOWED A TENDENCY FOR WELL-RETAINED ITEMS TO HAVE SHORTER LATENCIES THAN THOSE POORLY RETAINED. A SERIES OF EXPERIMENTS WAS CARRIED OUT ON INSTRUCTIONAL HISTORY VARIABLES IN TEACHING A MIRROR-IMAGE, OBLIQUE LINE DISCRIMINATION. TECHNIQUES OF STIMULUS FADING AND FEEDBACK CONDITIONS INDICATED THAT STIMULUS CONTROL WAS DIFFICULT TO OBTAIN. INCREASED SUCCESS WAS ATTAINED WHEN PROCEDURES WERE CHANGED FROM SIMULTANEOUS TO SUCCESSIVE STIMULUS PRESENTATIONS, AND WHEN THE INTER-TRIAL INTERVAL WAS DECREASED. A COMPUTER-ASSISTED LABORATORY IN STATISTICAL INFERENCE WAS EVALUATED TO DETERMINE ITS EFFECT ON MASTERY OF STATISTICAL CONCEPTS AND ON ATTITUDES TOWARD THE COMPUTER. IN GENERAL, WORKING ON A COMPUTER TERMINAL WAS REFLECTED BY POSITIVE ATTITUDINAL SHIFTS TOWARD COMPUTERS. A PRELIMINARY PROGRAMMING LANGUAGE (SKOOLBOL-1) USED FOR CARRYING OUT PSYCHOLOGICAL EXPERIMENTATION WAS EVALUATED AND MODIFIED; BASIC DESIGN WORK ON A SECOND-GENERATION LANGUAGE WAS INITIATED FOR EXPERIMENTAL WORK. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO, /ZOML1

AD-691 431 9/2 12/1
AEROSPACE RESEARCH LABS WRIGHT-PATTERSON AFB OHIO

FORTRAN M: PROGRAMMING PACKAGE FOR BAND MATRICES AND VECTORS, (U)

APR 69 57P PETTY, JAMES S. 1

REPT. NO. ARL-69-0064
PROJ: AF-7064
TASK: 706400

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, MATRIX ALGEBRA), (*MATRIX ALGEBRA, NUMERICAL ANALYSIS), DIGITAL COMPUTERS, COMPUTER PROGRAMS, BOUNDARY VALUE PROBLEMS, DIFFERENCE EQUATIONS (U)
IDENTIFIERS: FORTRAN M PROGRAMMING LANGUAGE, FORTRAN, IBM 7094 2 COMPUTERS, IBM 1620 COMPUTERS, FINITE DIFFERENCE THEORY (U)

FORTRAN M IS A MODIFIED FORTRAN LANGUAGE DESIGNED TO AID IN THE NUMERICAL MANIPULATION OF BAND MATRICES AND VECTORS. IN FORTRAN M, BAND MATRICES AND VECTORS MAY BE HANDLED IN A MANNER SIMILAR TO ORDINARY MATRIX ALGEBRA. TWO FORTRAN M PACKAGES AND THEIR USE ARE DESCRIBED: ONE FOR USE WITH AN IBM 7094 II COMPUTER AND ONE FOR AN IBM 1620. EACH PACKAGE CONSISTS OF A PROGRAMMING LANGUAGE, A TRANSLATOR PROGRAM AND A SET OF SUBROUTINES. APPENDICES CONTAIN AN ILLUSTRATIVE EXAMPLE AND SOURCE LISTS OF THE TRANSLATORS AND SUBROUTINES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-691 644 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

PROGRAMMING INFORMATION - LOGIC PROBLEMS, PART II. (SELECTED ARTICLES). (U)

FEB 69 62P KITOV,A. I. ;
REPT. NO. FTD-HT-23-230-68

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF MONO, PROGRAMMIROVANIE INFORMATSIONNO - LOGICHESKIKH ZADACH, MOSCOW, 1967 P100-188.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, ALGORITHMS), ECONOMICS, DIGITAL COMPUTERS, PROGRAMMING(COMPUTERS), INFORMATION RETRIEVAL, CONTROL SEQUENCES, USSR (U)
IDENTIFIERS: ALGOL 60 PROGRAMMING LANGUAGE, ALGEM PROGRAMMING LANGUAGE, LIST PROCESSING LANGUAGES, TRANSLATIONS (U)

THE BOOK PRESENTS THE PRINCIPLES AND PROCEDURES FOR PROGRAMMING INFORMATION AND LOGIC PROBLEMS SUCH AS THE PROCESSING OF ECONOMIC DATA, SEARCHING FOR SCIENTIFIC OR TECHNICAL INFORMATION, ETC. AN EXPANDED ALGORITHMIC LANGUAGE BASED ON ALGOL AND WHICH CONTAINS WITHIN ITSELF THE CAPACITY TO PROCESS COMPOUND QUANTITIES AND LISTS IS EXAMINED. INCLUDED IS A DESCRIPTION OF THE MEMORY STORAGE CAPABILITY IN THE MACHINE AND THE PROCESS OF HANDLING VARIOUS TYPES OF LISTS; ALL OF WHICH ASSURE A RAPID SEARCH FOR DATA IN AN IMMENSE INVENTORY OF INFORMATION. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-691 799 9/2
STANFORD UNIV CALIF DEPT OF COMPUTER SCIENCE

STANDARD LISP. (U)

MAY 69 33P HEARN,ANTHONY C. ;
REPT. NO. AI MEMO-90
CONTRACT: F44620-68-C-0075, SD-183

UNCLASSIFIED REPORT
PORTIONS OF THIS DOCUMENT ARE NOT FULLY LEGIBLE. SEE INTRODUCTION TO THIS JOURNAL.
SUPPLEMENTARY NOTE: REPORT ON STANFORD ARTIFICIAL INTELLIGENCE PROJECT.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INSTRUCTION MANUALS), DATA PROCESSING SYSTEMS, PROGRAMMING(COMPUTERS), COMPILERS, CODING, COMPUTATIONAL LINGUISTICS, STANDARDIZATION (U)
IDENTIFIERS: LISP PROGRAMMING LANGUAGE, LISP 1.5 PROGRAMMING LANGUAGE, TRANSLATOR ROUTINES (U)

WHEN IT WAS FIRST FORMULATED IN 1960, THE PROGRAMMING LANGUAGE LISP WAS A TRULY MACHINE INDEPENDENT LANGUAGE. HOWEVER, EVEN THE EARLIEST COMPUTER IMPLEMENTATION ENCOUNTERED PROBLEMS IN INPUT-OUTPUT CONTROL AND THE HANDLING OF FREE VARIABLES WHICH WERE NOT CONSIDERED IN THE ORIGINAL PAPER. SUCCESSIVE IMPLEMENTATIONS OF LISP ON MORE SOPHISTICATED MACHINES HAVE SOLVED SUCH PROBLEMS BY INDEPENDENT METHODS AND INTRODUCED EXTENSIONS OF THE LANGUAGE PECULIAR TO THOSE MACHINES. THE PAPER IS AN ATTEMPT TO PROVIDE A UNIFORM SUBSET OF LISP 1.5 AND ITS VARIANTS AS IT EXISTS TODAY. THE VERSION OF LISP DESCRIBED, WHICH WE CALL STANDARD LISP, IS SUFFICIENTLY RESTRICTED IN FORM SO THAT PROGRAMS WRITTEN IN IT CAN RUN UNDER ANY LISP SYSTEM UPWARDLY COMPATIBLE WITH LISP 1.5. AS FUNCTION NAMES VARY FROM SYSTEM TO SYSTEM AND INPUT-OUTPUT CONTROL IS DIFFERENT, SOME MODIFICATION OF THE CODE OF COURSE NECESSARY BEFORE FUNCTION DEFINITIONS CAN BE SUCCESSFULLY COMPILED IN ANY GIVEN SYSTEM. HOWEVER, THIS MODIFICATION IS PERFORMED AUTOMATICALLY BY A PREPROCESSOR, WHICH IS CUSTOM BUILT FOR A PARTICULAR SYSTEM. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML!

AD-692 695 9/2
RAND CORP SANTA MONICA CALIF

THE SIMSCRIPT II PROGRAMMING LANGUAGE! IBM 360 IMPLEMENTATION. (U)

JUL 69 51P KIVIAT,P. J. !SHUKIAR,H. J. !URMAN,J. B. !VILLANUEVA,R. !
REPT. NO. RM-5777-PR
CONTRACT! F44620-67-C-0045

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE! SUPPLEMENT TO REPT. NO. R-460-PR DATED OCT 68, AD-678 690. SEE ALSO REPT. NO. RM-5776-PR DATED OCT 68, AD-678 867.

DESCRIPTORS! (*PROGRAMMING LANGUAGES, DIGITAL COMPUTERS), COMPILERS, PROGRAMMING(COMPUTERS), INSTRUCTION MANUALS (U)
IDENTIFIERS! IBM 360 COMPUTERS, SIMSCRIPT 2 PROGRAMMING LANGUAGE, COMPUTER SYSTEMS PROGRAMS (U)

THE MEMORANDUM, A SUPPLEMENT TO THE USER'S MANUAL (AD-678 690), DESCRIBES THE IMPLEMENTATION OF SIMSCRIPT II ON RAND'S 360/65 COMPUTER. THE ERROR CODES ISSUED DURING COMPILATION AND DURING EXECUTION ARE LISTED AND THEIR MEANINGS EXPLAINED. THE FIRST SECTION OF THIS MANUAL CONTAINS MODIFICATIONS TO AD-678 690 AND CAN ONLY BE USED IN CONJUNCTION WITH IT! IT IDENTIFIES THE STATEMENTS THAT ARE NOT YET IMPLEMENTED. OTHER SECTIONS GIVE THE RULES AND DECK SETUP FOR COMPILATION, ASSEMBLY, AND EXECUTION! WAYS TO DEFINE ADDITIONAL DATA SETS! CALLING ASSEMBLER LANGUAGE ROUTINES! STORAGE ALLOCATION DURING EXECUTION! RANDOM NUMBER GENERATION AND STATISTICAL FUNCTIONS! AND DIRECTIONS FOR INSTALLING THE COMPILER, INCLUDING A LISTING OF JCL THAT CAN BE USED TO LOAD THE LIBRARY, COMPILER, AND ASSEMBLY INTERFACE AND TO PUNCH OFF THE SIMSCRIPT II MACROS, DISTRIBUTED PROCEDURES, AND SAMPLE PROGRAM. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-693 121 9/2
RAND CORP SANTA MONICA CALIF

SOVIET CYBERNETICS REVIEW, VOLUME 3, NUMBER 8, 1969. (U)

AUG 69 159P HOLLAND,WADE B. 1
REPT. NO. RM-6000/8-PR
CONTRACT1 F44620-67-C-0045

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE1 SEE ALSO VOLUME 3, NUMBER 6, AD-692 697.

DESCRIPTORS1 (*COMPUTERS, USSR), CYBERNETICS, PROGRAMMING LANGUAGES, OPTIMIZATION, MANAGEMENT PLANNING, PROGRAMMED INSTRUCTION, MACHINE TRANSLATION, READING MACHINES (U)

THIS ISSUE INCLUDES TWO CONFERENCE REPORTS ON THE DESIGN PROGRAM FOR ASVT MODULAR HARDWARE, AND TWO ARTICLES DISCUSSING THE CAUSES OF THE TIME LAG IN IMPLEMENTING NEW TECHNOLOGY, A SUMMARY OF THE SOVIET VIEW OF WRITING PROGRAMMING LANGUAGES IS GIVEN IN AN ARTICLE ANNOUNCING THE ALGOL 60-BASED ALPHA LANGUAGE, NOW USED TO COMPILE BESM-6 CODE ON THE M-20 COMPUTER. THE RECURSIVE FUNCTIONS ALGORITHMIC LANGUAGE (REFAL), USED ON THE BESM-6, IS ALSO DISCUSSED. ARTICLES ON COMPUTER HARDWARE INCLUDE DISCUSSIONS OF THE (1) UP-1 TWO-WAY ANALOG/DIGITAL CONVERTER USING URAL-10 MODULES1 (2) PROMIN' COMPUTER TO PROCESS EXPERIMENTAL DATA1 (3) KAKTUS SYSTEM OF COMPUTER-MONITORED INSTRUCTION1 (4) KVN-5 DEVICE FOR AUTOMATIC VACUUM SPRAYING OF THIN FILMS1 (5) CHARS READER FOR TYPEWRITTEN DATA1 (6) VNIIEM-3 CONTROL COMPUTER FOR INDUSTRIAL USE. A NEW BOOK ON THE PROBLEM OF OPTIMALITY IS OF CONSIDERABLE INTEREST (1) BECAUSE OPTIMALITY IS ONE OF THE IMPORTANT PROBLEMS NOW BEING STUDIED BY CYBERNETIC METHODS, AND (2) BECAUSE OF THE PUBLISHER'S FORWARD AND DISCLAIMER. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML;

AD-693 555 9/2
RCA LABS PRINCETON N J

CDL1, A COMPUTER DESCRIPTION LANGUAGE, PART I, THE NATURE OF THE DESCRIPTION LANGUAGE AND ORGANIZATION OF DESCRIPTIONS. PART II, KINDS OF DESCRIPTIONS OF A COMPUTING SYSTEM, (U)

JUL 69 34P SRINIVASAN,CHITOOR V. ;
REPT. NO. SR-3
CONTRACT: F19628-68-C-0070
PROJ: AF-5632
TASK: 563202
MONITOR: AFCRL 69-0322

UNCLASSIFIED REPORT

DESCRIPTORS: (*DIGITAL COMPUTERS, DESIGN), (*PROGRAMMING LANGUAGES, DIGITAL COMPUTERS), CLASSIFICATION, COMPUTER LOGIC, SYMPOSIA (U)
IDENTIFIERS: *COMPUTER AIDED DESIGN, CDL1 PROGRAMMING LANGUAGE (U)

PART I OF THIS REPORT INTRODUCES SOME OF THE BASIC PRINCIPLES THAT GUIDED US IN THE DEVELOPMENT OF THE COMPUTER DESCRIPTION LANGUAGE, CDL1. THE LANGUAGE IS ADDRESSED TOTALLY TO THE CREATION OF A DESCRIPTIVE DATA BASE OF A COMPUTING SYSTEM, WHICH COULD BE USED FOR A VARIETY OF DESIGN AID APPLICATIONS. THE NATURE OF CDL1 AND THE ORGANIZATION OF DESCRIPTIONS BASED ON AN OBJECT CLASSIFICATION SCHEME ARE DISCUSSED. IT IS SHOWN THAT THE CLASSIFICATION OF AN OBJECT NAME IS RELEVANT TO THE WAY THE NAME WOULD BE DEFINED, AND THE WAY THE DEFINITION WOULD BE FILED. PART II DISCUSSES THE LEVELS OF ABSTRACTION AT WHICH A SYSTEM COULD BE DESCRIBED, AND THE SIGNIFICANCE OF SUCH DESCRIPTIONS IN A DESIGN ENVIRONMENT. OUR INTEREST HERE IS TO INVESTIGATE HOW, FOR A SYSTEM WITH A GIVEN ABSTRACT ARCHITECTURE, ITS DETAILED SPECIFICATION EVOLVES DURING DESIGN, WE WISH TO IDENTIFY THE SIGNIFICANT STAGES OF DESIGN, CONSIDER MODES OF DESCRIPTIONS APPROPRIATE FOR EACH DESIGN STAGE, AND RELATE THE DESCRIPTIONS TO THE DESIGN PROBLEMS FACED BY THE DESIGNERS AT EACH STAGE. AT THE END OF DESIGN WE WISH TO OBTAIN AN ANALYTIC DESCRIPTION OF THE SYSTEM. THE CONCEPTS ARE DISCUSSED WITH A RUNNING EXAMPLE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-694 090 9/2
MICHIGAN UNIV ANN ARBOR SYSTEMS ENGINEERING LAB

MATHEMATICAL MODELS OF INFORMATION SYSTEMS. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. OCT 67-OCT 68,
SEP 69 144P GARNER, HARVEY L. ;
CONTRACT: AF 30(602)-3546
PROJ: AF-5581
TASK: 558109
MONITOR: RADC TR-69-256

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, MATHEMATICAL MODELS), AUTOMATA, PROGRAMMING LANGUAGES, SEQUENCES, TOPOLOGY, MATRIX ALGEBRA, GROUPS(MATHEMATICS) (U)
IDENTIFIERS: AUTOMATA THEORY, SEQUENTIAL MACHINES (U)

THIS REPORT SUMMARIZES RESEARCH IN THE DEVELOPMENT OF MATHEMATICAL MODELS OF INFORMATION PROCESSING SYSTEMS. PARTICULAR ATTENTION IS GIVEN TO A NEW APPROACH TO AUTOMATA THEORY, THE USE OF MULTIPLE INDEX MATRICES IN GENERALIZED AUTOMATA THEORY, ASYMPTOTIC DECOMPOSITION OF MACHINES, RECOGNIZABILITY OF EQUATION SETS, ALGEBRAIC ISOMORPHISM INVARIANTS FOR TRANSITION GRAPHS, ITERATIVE NETWORK REALIZATION OF SEQUENTIAL MACHINES, OPTIMUM SEQUENCING OF JOBS SUBJECT TO DEADLINES, AND THE THEORY OF FORMAL LANGUAGES AND ITS IMPACT ON THE DESIGN AND IMPLEMENTATION OF PROGRAMMING LANGUAGES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML/

AD-695 194 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

A SYSTEM FOR AUTOMATING ENGINEERING CALCULATIONS BASED ON THE 'MINSK-1' COMPUTER. (U)

APR 69 11P ZAITSEV,N. G. /

REPT. NO. FTD-MT-24-51-69

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF SEMINAR INFORMATSIONNO-UPRAVLYAYUSHCHIE SISTEMY. DOKLADY (USSR) N1 P16-22 1965.

DESCRIPTORS: (*EXPERIMENTAL DATA, DATA PROCESSING SYSTEMS), (*DIGITAL COMPUTERS, *TIME SHARING), DESIGN, OPERATION, PROGRAMMING LANGUAGES, COST EFFECTIVENESS, DATA TRANSMISSION SYSTEMS, TELETYPE SYSTEMS, COMPUTER STORAGE DEVICES, INPUT-OUTPUT DEVICES, PUNCHED TAPE, ERRORS, USSR (U)
IDENTIFIERS: *ENGINEERING COMPUTATION CENTERS, REMOTE COMPUTER TERMINALS, MINSK 1 COMPUTERS, ALGOL, MACHINE ORIENTED LANGUAGES, TRANSLATIONS (U)

DESIGN AND OPERATION OF REMOTE COMPUTER TERMINALS FOR ENGINEERING COMPUTATIONS, AS WELL AS A MODIFICATION OF ALGOL DEVELOPED FOR THIS PURPOSE, ARE DESCRIBED. THE SYSTEM PROVIDES FOR A VERY ECONOMICAL OPERATION, SUCH THAT EVEN THOSE WITH A RELATIVELY SMALL VOLUME OF WORK SHOULD BE ABLE TO AFFORD IT. THE PARTICULAR VERSION DESCRIBED BY THE AUTHOR IS BASED ON THE UTILIZATION OF THE MINSK-1 COMPUTER. THE REMOTE TERMINALS ARE EQUIPPED WITH TELETYPE EQUIPMENT THAT SERVES AS INPUT-OUTPUT FACILITY. THE PROBLEM IS TRANSMITTED BY THE USER VIA TELETYPE TO THE COMPUTING CENTER, WHERE IT IS PUNCHED OUT ON PAPER TAPE. THE MATHEMATICIAN ON DUTY CHECKS THE TAPE FOR POSSIBLE ERRORS AND TRANSFERS IT TO THE COMPUTER OPERATOR WHO RUNS THE PROBLEM. THE RESULTS ARE SENT VIA TELETYPE TO THE USER. THE VERSION OF ALGOL WHICH IS UTILIZED BY THE USER IS SIMPLE ENOUGH FOR ANY ENGINEER, WHO NEED NOT BE FAMILIAR WITH PROGRAMMING TECHNIQUES. TO REDUCE ERRORS EITHER REPEATED DATA TRANSMISSION, OR PARITY CHECK CAN BE USED. THE AUTHOR DESCRIBES THE REMOTE TERMINAL AND THE OPERATIONAL LANGUAGE IN SOME DETAIL. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-696 989 14/5 9/2
NEW YORK UNIV BRONX LAB FOR ELECTROSCIENCE RESEARCH

COMPUTER ANIMATION: A LITERATURE SURVEY. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
OCT 69 27P MELTZER,J. ;
REPT. NO. TR-403-8
CONTRACT: N00014-67-A-0467
PROJ: NR-049-274

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH BELL TELEPHONE LABORATORIES.

DESCRIPTORS: (*COMPUTERS, GRAPHICS), (*INPUT-OUTPUT DEVICES, MOTION PICTURES), REVIEWS, PROGRAMMING LANGUAGES, GRAPHICS, TRAINING FILMS, ANALOG COMPUTERS, DIGITAL COMPUTERS, MOTION PICTURE PHOTOGRAPHY (U)
IDENTIFIERS: *COMPUTER ANIMATION, *COMPUTER GENERATED MOTION PICTURES, UTILIZATION, GRAPHIC ARTS, ANIMATED DISPLAY SYSTEMS (U)

THE REPORT IS A LITERATURE SURVEY OF WORKS DEALING EXPRESSLY WITH COMPUTER ANIMATION OF MOTION PICTURE FILMS. THE PAPERS ARE DIVIDED INTO THE AREAS OF GENERAL DISCUSSIONS, ANIMATION LANGUAGES, AND SPECIFIC APPLICATIONS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-696 996 9/2 12/1 6/4 5/7
KROHN-RHODES RESEARCH INST INC WASHINGTON D C

ALGEBRAIC THEORY OF MACHINES, LANGUAGES, AND SEMIGROUPS, (U)

68 375P KROHN,KENNETH ;RHODES,JOHN L. ;ARBIB,MICHAEL A. ;

CONTRACT: AF 49(638)-1714
PROJ: AF-9749
TASK: 974901
MONITOR: AFOSR 69-2950TR

UNCLASSIFIED REPORT
AVAILABILITY: PAPER COPY AVAILABLE FROM THE ACADEMIC PRESS INC., NEW YORK, N. Y. PRICE $12.00.
SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH STANFORD UNIV., CALIF.

DESCRIPTORS: (•GROUPS(MATHEMATICS), AUTOMATA), (•COMPUTER LOGIC, ALGEBRA), (•PROGRAMMING LANGUAGES, ALGEBRA), COMPUTERS, ARTIFICIAL INTELLIGENCE, COMPUTATIONAL LINGUISTICS, CONTEXT FREE GRAMMARS, CONTEXT SENSITIVE GRAMMARS, PHRASE STRUCTURE GRAMMARS, SYNTAX, TOPOLOGY, COMBINATORIAL ANALYSIS, THEOREMS (U)
IDENTIFIERS: •SEMIGROUP THEORY, HOMOMORPHISMS, FINITE STATE ACCEPTORS, •AUTOMATA THEORY, KROHN-RHODES THEOREM (U)

THE BOOK IS AN INTEGRATED EXPOSITION OF THE ALGEBRAIC, AND ESPECIALLY SEMIGROUP-THEORETIC, APPROACH TO MACHINES AND LANGUAGES. IT IS DESIGNED TO CARRY THE READER FROM THE ELEMENTARY THEORY ALL THE WAY TO HITHERTO UNPUBLISHED RESEARCH RESULTS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO, /ZOML1

AD-697 800 9/2
NEW YORK UNIV BRONX LAB FOR ELECTROSCIENCE RESEARCH

A SURVEY AND AN ANNOTATED BIBLIOGRAPHY OF DATA STRUCTURES FOR COMPUTER GRAPHICS SYSTEMS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
SEP 69 84P WILLIAMS,ROBIN ;
REPT. NO. TR-403-6
CONTRACT: AF-AFOSR-1367-68, NSF-GJ-16
MONITOR: AFOSR 69-297BTR

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTERS, *GRAPHICS), (*DATA STORAGE SYSTEMS, *PROGRAMMING LANGUAGES), PROGRAMMING(COMPUTERS), COMPUTER LOGIC, BIBLIOGRAPHIES (U)
IDENTIFIERS: *COMPUTER GRAPHICS (U)

THE STRUCTURING OF DATA IN A COMPUTER IS A MOST IMPORTANT CONSIDERATION BECAUSE THE DATA STRUCTURE DIRECTLY AFFECTS THE EFFICIENCY OF A PROGRAM, BOTH IN THE AMOUNT OF MEMORY STORAGE NEEDED AND IN THE TIME TAKEN TO EXECUTE THE PROGRAM OR TO COMPUTE THE RESULT TO A REQUEST MADE OF THE SYSTEM. THE REPORT IS A SURVEY OF THE METHODS USED TO STORE DATA IN COMPUTER SYSTEMS AND GRAPHICS SYSTEMS IN PARTICULAR. THE DATA STRUCTURES OF THE COMMON HIGHER-LEVEL LANGUAGES (FORTRAN, ALGOL, AND PL/1) ARE BRIEFLY REVIEWED. THEN RING STRUCTURES ARE INTRODUCED (SKETCHPAD, CORAL) AND SOME PARTICULAR STRUCTURES THAT ARE USED WITH GRAPHICS SYSTEMS ARE DESCRIBED. AT THE END OF THE REPORT THERE IS AN ANNOTATED BIBLIOGRAPHY WHICH LISTS MOST OF THE AVAILABLE LITERATURE ON DATA STRUCTURES AND RELATED TOPICS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-697 806 9/2
DARTMOUTH COLL HANOVER N H THAYER SCHOOL OF ENGINEERING

GRIND: A LANGUAGE AND TRANSLATOR FOR COMPUTER GRAPHICS. (U)

JUN 69 87P CONN,ALEX P. 1

CONTRACT: F44620-68-C-0015
PROJ: AF-9744
MONITOR: AFOSR 69-2989TR

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON PROJECT THEMIS.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, GRAPHICS), INPUT-OUTPUT DEVICES, DIGITAL COMPUTERS, CATHODE RAY TUBES, COMPUTER PROGRAMS (U)
IDENTIFIERS: GRIND PROGRAMMING LANGUAGE, *COMPUTER GRAPHICS, PDP 9 COMPUTERS, THEMIS PROJECT (U)

GRIND (GRAPHICAL INTERPRETIVE DISPLAY LANGUAGE) IS A LANGUAGE FOR DRAWING PICTURES AND MODELS ON THE PDP-9 GRAPHIC 2 SCOPE, WHICH REQUIRES VIRTUALLY NO KNOWLEDGE OF COMPUTERS AND ONLY AN ELEMENTARY KNOWLEDGE OF GEOMETRY. PROGRAMS ARE WRITTEN USING COMMANDS SUCH AS LINE AND CIRCLE, AND THE RESULTS ARE INSTANTLY DISPLAYED ON THE SCOPE. MISTAKES ARE EASILY ERASED UNTIL A SUITABLE FINAL DRAWING IS REACHED, WHICH MAY THEN BE SAVED ON PAPER TAPE FOR FUTURE USE. SINCE PROGRAMMING IS DONE WITH SPECIFIED LENGTHS AND POSITIONS, THE RESULTANT DIMENSIONS ARE EXACT AND COULD THEREFORE BE READILY USED IN SUBSEQUENT COMPUTER ANALYSIS. A TYPED COPY OF COMMANDS IS AUTOMATICALLY PRINTED ENABLING THE USER TO RECONSTRUCT SIMILAR MODELS OR MAKE CHANGES WITH THE MINIMUM OF EFFORT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-699 508 9/2 14/2
NEW YORK UNIV N Y SCHOOL OF ENGINEERING AND SCIENCE

LANGUAGES FOR PROGRAMMING AUTOMATIC TEST EQUIPMENT INCLUDING AN INTRODUCTION TO ANALOG AND DIGITAL COMPUTERS, (U)

JAN 69 36P GARCIA-AGUILAR, GABRIEL ;
CONTRACT: N00039-68-C-3579
PROJ: XF-013-17-01, SETE 210/98
TASK: 5599

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTERS, REVIEWS), (*TEST EQUIPMENT, *PROGRAMMING LANGUAGES), ANALOG COMPUTERS, DIGITAL COMPUTERS, COMPUTER LOGIC, COMPILERS, AUTOMATION (U)

THE REPORT DEALS WITH LANGUAGES USED TO PROGRAM ELECTRONIC COMPUTERS FOR AUTOMATIC TESTING. THE PRIMARY PURPOSE OF THE REPORT IS TO TABULATE, AND EXPLAIN THE VARIOUS LANGUAGES SO FAR DEVELOPED TO MEET THESE TESTING REQUIREMENTS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-700 029 9/2
RAND CORP SANTA MONICA CALIF

COMPUTER GRAPHICS FOR SIMULATION PROBLEM-SOLVING, (U)

DEC 69 28P BELL,T. E. 1

REPT. NO. RM-6112-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTERS, *GRAPHICS), (*DATA PROCESSING SYSTEMS, SIMULATION), MAN-MACHINE SYSTEMS, INPUT-OUTPUT DEVICES, DISPLAY SYSTEMS, PROBLEM SOLVING, MATHEMATICAL MODELS, PROGRAMMING LANGUAGES (U)
IDENTIFIERS: *INTERACTIVE COMPUTER GRAPHICS, COMPUTER GRAPHICS, *COMPUTERIZED SIMULATION, GAPSS(GRAPHICAL ANALYSIS PROCEDURES FOR SYSTEM SIMULATION), GRAPHICAL ANALYSIS PROCEDURES FOR SYSTEM SIMULATION, GPSS PROGRAMMING LANGUAGE, GANTT CHARTS, COMPUTER AIDED DESIGN (U)

THE PAPER GIVES A DESCRIPTION OF THE USE OF INTERACTIVE COMPUTER-GRAPHIC ANALYSIS IN SIMULATING, AND THEN DESIGNING AND DEVELOPING A VIDEO GRAPHICS SYSTEM WHICH WILL PROVIDE LOW-COST, HIGH-CAPABILITY, RESPONSIVE, GRAPHIC COMPUTER ACCESS TO MANY USERS SIMULTANEOUSLY. SIMULATION BEGAN BEFORE THE SYSTEM WAS FULLY DEFINED, AS AN AID TO DESIGN, OF THE THREE TYPE OF DISPLAY--STATISTICS, VARIABLE GRAPH, AND GANTT CHART--THE LATTER WAS USED MOST, GRAPHIC ANALYSIS CUT TOTAL MODELING TIME APPROXIMATELY IN HALF. GRAPHICS CAPABILITIES FACILITATED ANALYSIS OF A LARGE VOLUME OF SIMULATION OUTPUT TO EXAMINE THE MODEL IN DETAIL AND TO DISCOVER ANOMALOUS BEHAVIOR; ONGOING SIMULATION PROVED A VALUABLE AID TO DESIGN. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO, /ZOML1

AD-700 144 9/2
CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER SCIENCE

THE DESCRIPTION, SIMULATION, AND AUTOMATIC IMPLEMENTATION OF DIGITAL COMPUTER PROCESSORS. (U)

DESCRIPTIVE NOTE: DOCTORAL THESIS,
MAY 69 334P DARRINGER,JOHN A. ;
CONTRACT: F44620-67-C-0058
PROJ: AF-9718
MONITOR: AFOSR 70-0154TR

UNCLASSIFIED REPORT

DESCRIPTORS: (•DIGITAL COMPUTERS, DESIGN), (•PROGRAMMING LANGUAGES, SIMULATION), COMPUTER LOGIC, CONTROL SEQUENCES, COMPUTATIONAL LINGUISTICS, GRAMMARS, MATHEMATICAL LOGIC, COMPUTER PROGRAMS, THESES (U)
IDENTIFIERS: •CENTRAL PROCESSING UNITS, COMPUTER AIDED DESIGN, •SIMULATION LANGUAGES, APDL PROGRAMMING LANGUAGE (U)

THE DISSERTATION REPORTS AN INVESTIGATION IN THE AREA OF AUTOMATED COMPUTER DESIGN. A LANGUAGE IS DEVELOPED FOR DESCRIBING THE BEHAVIOR OF DIGITAL COMPUTER PROCESSORS IRRESPECTIVE OF THEIR EVENTUAL IMPLEMENTATION. ALGOL 60 IS USED AS A BASE LANGUAGE AND SEVERAL FEATURES ARE ADDED INCLUDING (1) REGISTER DATA TYPES AND OPERATORS TO ALLOW THE CONVENIENT AND ACCURATE DESCRIPTION OF THE REGISTER COMPUTATIONS, WHICH OCCUR IN ALL PROCESSORS, (2) 'TIME BLOCKS' TO PERMIT THE SPECIFICATION OF THE DELAYS INVOLVED IN OPERATIONS, AND (3) 'IF EVER STATEMENTS' TO ALLOW THE DESCRIPTION OF PARALLEL OPERATIONS. PROGRAMS ARE PRESENTED FOR COMPILING A DESCRIPTION INTO A SUBSET OF ALGOL FOR SIMULATION AND FOR TRANSLATING IT INTO A HARDWARE SPECIFICATION FOR ACTUAL IMPLEMENTATION. THE HARDWARE SPECIFICATION CONSISTS OF A LIST OF HARDWARE ELEMENTS, A TABLE OF INTERCONNECTIONS AMONG THE ELEMENTS, AND A STATE TABLE DESCRIPTION OF A CONTROLLER THAT WILL SEQUENCE THE FLOW OF DATA THROUGH THE HARDWARE NETWORK. A SMALL EXISTING COMPUTER IS DESCRIBED AT SEVERAL LEVELS IN THE LANGUAGE, THE PROCESSOR IS SIMULATED AND IMPLEMENTED AT EACH LEVEL, AND FINALLY THE PERFORMANCE OF THE PROGRAMS IS EVALUATED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO, /ZOML1

AD-700 316 9/2
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB

GRAPHICS, (U)

DESCRIPTIVE NOTE: SEMIANNUAL TECHNICAL SUMMARY REPT, 1 JUN-30 NOV 69,
JAN 70 30P FORGIE, JAMES W, 1
CONTRACT: AF 19(628)-5167, ARPA ORDER 691
MONITOR: ESD TR-69-384

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 31 MAY 69, AD-689 782.

DESCRIPTORS: (*DIGITAL COMPUTERS, DISPLAY SYSTEMS), (*PROGRAMMING(COMPUTERS), *GRAPHICS), (*INTEGRATED CIRCUITS, DESIGN), TIME SHARING, PROGRAMMING LANGUAGES, GATES(CIRCUITS), URBAN PLANNING, MASKING (U)
IDENTIFIERS: TX2 COMPUTER, *COMPUTER GRAPHICS, COMPUTER AIDED DESIGN, LARGE SCALE INTEGRATED CIRCUITS, GRAPH THEORY (U)

GRAPHICAL OUTPUT AND INTERACTIVE INPUT ROUTINES HAVE BEEN WRITTEN FOR THE BASIC COMBINED PROGRAMMING LANGUAGE (BCPL), OFFERING A USEFUL ALTERNATIVE TO ASSEMBLY LANGUAGE FOR WRITING GRAPHICAL SUBSYSTEMS ON TX-2. DESIGN WORK IS UNDER WAY ON THE SYSTEM ARCHITECTURE AND SOFTWARE FOR A NEW TERMINAL SUPPORT SYSTEM INTENDED TO SERVE AS MANY AS 20 INTERACTIVE BUT NONDYNAMIC GRAPHIC CONSOLES. A STORAGE SCOPE EDITOR HAS BEEN IMPLEMENTED ON TX-2 WITH THE INTENT OF EXPLORING SOME OF THE PROBLEMS TO BE ENCOUNTERED IN THE NEW SYSTEM WHICH WILL HAVE STORAGE SCOPES FOR DISPLAY OUTPUT. EXPERIMENTS WITH THE COLOR DISPLAY ON TX-2 AWAIT THE DELIVERY OF A NEW CRT WITH LONGER PERSISTENCE. A BOX, OR RECTANGLE, GENERATOR WAS DESIGNED AND INSTALLED IN AN ATTEMPT TO REDUCE THE DISPLAY FLICKER FOR THE SEMICONDUCTOR MASK DESIGN APPLICATION. THE RESULTING IMPROVEMENT PROMPTED DETAILED MEASUREMENT OF DISPLAY SYSTEM PERFORMANCE. A NEW CHARACTER GENERATOR BASED ON THE STROKE WRITING PRINCIPLE HAS BEEN BUILT AND IS BEING CHECKED OUT. A PROGRAM WRITTEN TO DEMONSTRATE THE APPLICATION OF INTERACTIVE GRAPHICS TO REGIONAL PLANNING HAS INCIDENTALLY SHOWN THAT THE STORAGE SCOPE CAN PROVIDE QUITE ADEQUATE EIGHT-LEVEL GRAY-SCALE AREA MAPS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-700 817 9/2 5/8
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS

NATURAL COMMUNICATION WITH COMPUTERS II. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 AUG 67-30 SEP 69,
OCT 69 46P BOBROW,DANIEL G. ;
REPT. NO. BBN-1893
CONTRACT: F19628-68-C-0125, ARPA ORDER-627
PROJ: AF-8668
MONITOR: AFCRL 69-0523

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: CONTINUATION OF CONTRACT AF 19(628)-5065. SEE ALSO AD-658 829.

DESCRIPTORS: (*COMPUTERS, *INPUT-OUTPUT DEVICES), (*PROGRAMMING LANGUAGES, *REPORTS), (*PATTERN RECOGNITION, REPORTS), ABSTRACTS, SPEECH RECOGNITION, MAN-MACHINE SYSTEMS, TIME SHARING, REAL TIME, DISPLAY SYSTEMS, SEMANTICS, COMPUTATIONAL LINGUISTICS (U)
IDENTIFIERS: PROCEDURE ORIENTED LANGUAGES, LISP PROGRAMMING LANGUAGE, FLIP PROGRAMMING LANGUAGE (U)

THE PAPER REPORTS ON RESEARCH TO DEVELOP TECHNIQUES TO FACILITATE NATURAL COMMUNICATION BETWEEN COMPUTERS AND PEOPLE, OTHER COMPUTERS, AND REAL TIME DEVICES. THE WORK IS DIVIDED INTO TASKS COVERING REPRESENTATION OF SEMANTIC INFORMATION, SPECIAL PURPOSE LANGUAGES, REAL TIME INPUT-OUTPUT, PATTERN RECOGNITION, AND TIME SHARING RESEARCH AND MODELING. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-701 677 9/2
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

DES-1: AN INTER-ACTIVE CONTINUOUS SYSTEM SIMULATION LANGUAGE. (U)

DESCRIPTIVE NOTE: MASTER'S THESIS,
JUN 69 51P KALASHIAN,MICHAEL ALEX ;

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, SIMULATION), DIGITAL COMPUTERS, MAN-MACHINE SYSTEMS, COMPILERS, INPUT-OUTPUT DEVICES, PROGRAMMING(COMPUTERS), THESES (U)
IDENTIFIERS: DES-1 PROGRAMMING LANGUAGE, SIMULATION LANGUAGES, *DIGITAL SIMULATON, INTERACTIVE COMPUTERIZED SIMULATION (U)

THERE ARE STRONG TUTORIAL ADVANTAGES TO DIGITAL COMPUTER SIMULATION OF CONTROL SYSTEM'S PROBLEMS. THIS IS PARTICULARLY TRUE WHERE SUCH SIMULATIONS DO NOT REQUIRE SOPHISTICATED PROGRAMMING TECHNIQUES AND WHERE THE USER MAY DIRECTLY INTERACT WITH HIS-PROBLEM. THE PURPOSE OF THE STUDY WAS TO DEVELOP SUCH A CAPABILITY FOR THE NAVAL POSTGRADUATE SCHOOL'S DIRECT-ACCESS COMPUTER SYSTEM. THE INSTALLATION WAS TO BE ACCOMPLISHED USING THE DES-1 SIMULATION LANGUAGE AND AN SDS 9300 DIGITAL COMPUTER. THE DES-1 SOFTWARE REQUIRES A SPECIAL DES-1 CONSOLE FOR OPTIMUM PERFORMANCE. DUE TO THE LACK OF THIS CONSOLE, A REFORMULATION OF THE LANGUAGE WAS NECESSARY. THIS PROCESS INVOLVED SIMULATING THE CONSOLE AND REVISING THE LANGUAGE TO OPERATE WITH EXISTING HARDWARE. THE LANGUAGE WAS RE-WRITTEN AND THE REVISED SYSTEM HAS BEEN INSTALLED AS AN OPERATING SYSTEM. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-701 680 9/2
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

A SIMULATED MICRO-PROGRAMMED COMPUTER UTILIZING THE GRAPHIC DISPLAY OF AN IBM 360. (U)

DESCRIPTIVE NOTE: MASTER'S THESIS.
DEC 69 117P FRELICH,ALAN WENCIL ;ROTH, MICHAEL CHARLES ;

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTERS, MODELS(SIMULATIONS)), COMPUTER PROGRAMS, DISPLAY SYSTEMS, CATHODE RAY TUBES, PROGRAMMING LANGUAGES, COMPILERS, INPUT-OUTPUT DEVICES, TRAINING DEVICES, DESIGN, THESES (U)
IDENTIFIERS: MICROPROGRAMMING, COMPUTERIZED SIMULATION, COMPUTER GRAPHICS (U)

A SMALL HYPOTHETICAL COMPUTER WAS DESIGNED AND SIMULATED USING A 2250 DISPLAY UNIT OPERATING ON AN IBM 360/67 COMPUTER. THE HYPOTHETICAL COMPUTER FEATURES A MICRO-PROGRAMMING CAPABILITY WHICH ALLOWS THE USER TO DESIGN HIS OWN MACHINE LANGUAGE STRUCTURE FOR ANY PARTICULAR APPLICATION. THE 2250 CONSOLE IS SET UP TO SIMULATE THE OPERATOR'S CONSOLE OF THE HYPOTHETICAL MACHINE, WITH THE CRT BEING USED TO DISPLAY SELECTED PORTIONS OF MEMORY AND REGISTERS. FOR EASE OF USE, A COMPILER IS INCLUDED IN THE SYSTEM TO ALLOW THE USER TO WRITE HIS MICROPROGRAM IN A HIGHER LEVEL LANGUAGE. DISCUSSIONS OF THE COMPILER, THE INTERPRETER, AND THE PROGRAMMING AND CREATION OF THE PROPER TYPE OF GRAPHIC DISPLAY ARE INCLUDED. A SET OF OPERATING INSTRUCTIONS FOR THE HYPOTHETICAL COMPUTER ENABLES THE USER TO PROGRAM AND OPERATE THE MACHINE WITHOUT THE NEED TO BE FAMILIAR WITH THE 2250 DISPLAY UNIT BEFOREHAND. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-702 398 12/2 9/2
MICHIGAN UNIV ANN ARBOR

ON THE REPRESENTATION OF MARKOVIAN SYSTEMS BY NETWORK MODELS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
AUG 69 121P WALLACE,VICTOR L. ;
REPT. NO. TR-21, SEL-TR-42
CONTRACT: DA-49-083-OSA-3050, ARPA ORDER-716
PROJ: ORA-07449

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON PROJ. CONCOMP.

DESCRIPTORS: (*NETWORKS, MATHEMATICAL MODELS), (*QUEUEING THEORY, STOCHASTIC PROCESSES), PROGRAMMING LANGUAGES, SYNTAX, SEMANTICS, CONTEXT FREE GRAMMARS, DIGITAL COMPUTERS, MAN-MACHINE SYSTEMS, GRAPHICS (U)
IDENTIFIERS: *MARKOV CHAINS, TREES(MATHEMATICS), NETWORK FLOWS, CONCOMP PROJECT (U)

FORMAL, UNAMBIGUOUS MATHEMATICAL STRUCTURES ARE DEVELOPED FOR REPRESENTING MARKOVIAN QUEUEING NETWORKS AND FOR SYSTEMATICALLY CONSTRUCTING A DESCRIPTION OF A CONTINUOUS-PARAMETER MARKOV CHAIN MODEL FROM A DESCRIPTION OF THE NETWORK DIAGRAM. A FORMAL QUEUEING DIAGRAM NOTATION IS DEVELOPED AS A PICTORIAL LANGUAGE. AN APPROACH TO THE PROBLEM DECOMPOSITION AND RECOMPOSITION OF MARKOVIAN QUEUEING NETWORKS IS PRESENTED, AND APPLIED TO REALISTIC QUEUEING NETWORKS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-702 895 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

CYBERNETICS. NUMBER 6, 1967 (SELECTED ARTICLES). (U)

DEC 69 49P SMIRNOV,V. K. ;MYAMLIN,A. N. ;SKARNYKIN,V. S. ;STRONGIN,R. G. ; BOGOLYUBOV,I. N. ;
REPT. NO. FTD-MT-24-411-69
PROJ: FTD-6050205

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF KIBERNETIKA (USSR) N6 P19-25, 73-78, 85-87 1967, BY W. W. KENNEDY.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, REPORTS), (*DATA STORAGE SYSTEMS, ALGORITHMS), (*COMPUTER LOGIC, REPORTS), PROGRAMMING(COMPUTERS), DATA PROCESSING SYSTEMS, LOGIC CIRCUITS, USSR (U)
IDENTIFIERS: THRESHOLD LOGIC, ALGORITHMIC LANGUAGES, TRANSLATIONS (U)

CONTENTS: INPUT LANGUAGE OF A COMPUTER WITH MAGAZINE MEMORY; APPRAISAL OF THE EFFICIENCY OF ONE METHOD OF SORTING ON DIGITAL COMPUTER WITH USE OF EXTERNAL MEMORY; AND MINIMIZATION OF TESTING DURING SYNTHESIS OF A THREE-STABLE THRESHOLD ELEMENT. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-702 983 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

LYAPAS ALGORITHMIC LANGUAGE AND AUTOMATION OF SYNTHESIS OF RELAY SYSTEMS. (U)

JAN 70 16P ZAKREVSKII,A. D. ;
REPT. NO. FTD-MT-24-383-69
PROJ: FTD-6050202

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF MONO, VSESOYUZNOE SOVESHCHANIE PO AVTOMATICHESKOMU UPRAVLENIYU (TEKHNICHESKOI KIBERNETIKI), (3RD) ODESSA, 1965 (ALL-UNION CONFERENCE ON AUTOMATIC CONTROL (TECHNICAL CYBERNETICS), (3RD) ODESSA, 1965) MOSCOW, 1967 P321-327, BY W. W. KENNEDY.

DESCRIPTORS: (*COMPUTER LOGIC, *PROGRAMMING LANGUAGES), DIGITAL COMPUTERS, DESIGN, MATHEMATICAL LOGIC, ALGORITHMS, COMPUTATIONAL LINGUISTICS, SYNTAX, PROGRAMMING(COMPUTERS), RELAYS, USSR (U)
IDENTIFIERS: LYAPAS PROGRAMMING LANGUAGE, ALGORITHMIC LANGUAGES, TRANSLATIONS (U)

IN SYNTHESIZING RELAY SYSTEMS, TRIAL OF MANY VERSIONS IS UNAVOIDABLE; HENCE, THE DESIRABILITY FOR AUTOMATING THE SOLUTION OF LOGIC PROBLEMS INCLUDED IN THE SYNTHESIS. THE LYAPAS ('LOGICAL LANGUAGE FOR PRESENTATION OF SYNTHESIS ALGORITHMS') LANGUAGE WAS SPECIALLY DEVELOPED FOR THIS TASK. THE NEW LANGUAGE AND ITS ACCOMPANYING PROGRAMMING SYSTEM WERE DEVELOPED AND OPTIMIZED JOINTLY. COMPACTNESS OF ALGORITHM PRESENTATION, PROXIMITY TO PUBLICATION LANGUAGE, MAXIMUM USE OF FEATURES OF MODERN GENERAL-PURPOSE DIGITAL COMPUTERS, AND SIMPLICITY OF TRANSLATION INTO MACHINE LANGUAGES WERE THE OBJECTIVES. THE LANGUAGE HAS TWO LEVELS WHICH DIFFER IN QUALITY. THE FIRST LEVEL IS CLOSER TO THE LANGUAGES OF MODERN GENERAL-PURPOSE COMPUTERS, AT THIS LEVEL, INTENDED FOR FINE STRUCTURE OF ALGORITHMS, PROGRAMS CAN BE SET UP WHICH ARE EQUIVALENT TO 200-300 MACHINE INSTRUCTIONS. THE SECOND LEVEL IS INTENDED FOR PRESENTATION OF COMPLICATED HIERARCHIC-STRUCTURE PROGRAMS INVOLVING AN EXPANDABLE SET OF OPERATORS AND A SET OF ROUTINES. THE SECOND-LEVEL PROGRAMS HAVE A MUCH LARGER CAPACITY THAN THE FIRST-LEVEL ONES. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO, /ZOML1

AD-703 060 9/2 5/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

MANIPULATION SYSTEM FOR INPUT OF INQUIRIES IN SIMPLIFIED RUSSIAN LANGUAGE INTO A COMPUTER, (U)

DEC 69 24P AFANASEV, V. N. ;KOLINKO, A. I. ;YAKIMENKO, S. N. ;
REPT. NO. FTD-MT-24-406-69
PROJ: FTD-6050205

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF INFORMATSIONNO-UPRAVLYAYUSHCHIE SISTEMY (USSR) N2 P81-101 1967, BY CHARLES T. OSTERTAG.

DESCRIPTORS: (*INFORMATION RETRIEVAL, DIGITAL COMPUTERS), (*PROGRAMMING(COMPUTERS), RUSSIAN LANGUAGE), PROGRAMMING LANGUAGES, USSR (U)
IDENTIFIERS: *MACHINE ORIENTED LANGUAGE, TRANSLATIONS (U)

KEY QUESTIONS IN THE PROBLEM OF COMMUNICATION AT THE MAN-MACHINE INTERFACE OF COMPUTING AND INFORMATION SYSTEMS ARE THE CLOSENESS OF THE FORMALIZED LANGUAGE TO THE NATURAL LANGUAGE AND THE POSSIBILITY OF MANIPULATING THE SYSTEM IN THE NATURAL LANGUAGE. THE WRITERS UNDERTOOK TO DESIGN A MANIPULATION SYSTEM FOR THE SIMPLEST POSSIBLE FORMULATION OF INQUIRIES FOR THE INFORMATION SYSTEM TO PROVIDE IT WITH CERTAIN ALGORITHMIC AND INFORMATIONAL FEATURES, FOR PERMITTING INPUT IN A NATURAL FORM TO BE USED BY PERSONS UNFAMILIAR WITH ITS STRUCTURE, AND INCORPORATING ADAPTABILITY OF THE MANIPULATION SYSTEM. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML;

AD-703 244 9/2
PENNSYLVANIA UNIV PHILADELPHIA MOORE SCHOOL OF ELECTRICAL ENGINEERING

A DATA DESCRIPTION FACILITY. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
APR 70 33P SMITH,DIANE PIROG ;
REPT. NO. 70-23
CONTRACT: N00014-67-A-0216-0007
PROJ: NR-049-272

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, *PROGRAMMING LANGUAGES), INFORMATION RETRIEVAL, DATA STORAGE SYSTEMS, INTERFACES, COMPUTATIONAL LINGUISTICS, SYNTAX, MANAGEMENT PLANNING (U)
IDENTIFIERS: DATA BASES, *FILE STRUCTURES, *DATA MANAGEMENT (U)

PROBLEMS WHICH HAVE ARISEN IN THE MANAGEMENT OF DATA ARE EXAMINED FOR A COMMON ROOT. THE EXAMINATION SUGGESTS THE NEED FOR BETTER DATA DESCRIPTION FACILITIES. ON THIS BASIS, AN ATTEMPT IS MADE TO GENERALIZE THE FUNCTIONS OF DATA DESCRIPTION, AND A DEFINITION OF A DATA DESCRIPTION LANGUAGE IS FORMULATED. CURRENT WORK ON ALL ASPECTS OF THESE PROBLEMS IS SURVEYED AND CRITICIZED ON THE BASIS OF HOW WELL DEFINED FUNCTIONS ARE FULFILLED. THOSE PROBLEMS ON WHICH NO START HAS BEEN MADE OR FOR WHICH ONLY INADEQUATE SOLUTIONS HAVE BEEN PROPOSED ARE SUMMARIZED AND A MORE COMPREHENSIVE, GENERALIZED APPROACH IS PROPOSED. FINALLY, THE SPECIFICATION IS GIVEN OF A DATA DESCRIPTION LANGUAGE AND ITS PROCESSOR, WHICH ARE BEING DESIGNED TO MEET THE DEMANDS OF THE APPROACH PROPOSED AND THE PROBLEMS DISCUSSED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-703 784 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

INPUT LANGUAGE AND ADDRESS TRANSLATOR FOR THE DIGITAL COMPUTER MINSK-12. (U)

MAR 70 14P KUZMENKO,G. E. ;SEMIK,V. P. ;

REPT. NO. FTD-HT-23-113-70
PROJ: FTD-6050205
TASK: DIA-68-05-02

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF SEMINAR AVTOMATIZATSIYA PROGRAMMIROVANIYA. DOKLADY (USSR) N2 P58-67 1967. BY D. KOOLBECK.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INPUT-OUTPUT DEVICES), DIGITAL COMPUTERS, USSR (U)
IDENTIFIERS: MACHINE ORIENTED LANGUAGES, TRANSLATIONS (U)

THE INPUT LANGUAGE OF THE ADDRESS TRANSLATOR IS BASED ON THE FOLLOWING SYMBOLS: 'FUNDAMENTAL SYMBOL' - 'LETTER,' 'NUMERAL,' 'MARK.' LETTERS OF THE RUSSIAN, LATIN, AND GREEK ALPHABETS ARE USED. THE LETTERS SERVE TO FORM THE IDENTIFIERS OF ADDRESSES, MARKS, AND FUNCTIONS. NUMERALS ARE USED TO PRODUCE CONSTANTS, CODES, AND IDENTIFIERS OF ADDRESSES AND MARKS. THE INPUT LANGUAGE PERMITS FORMATION OF THE FOLLOWING OPERATORS: CONVEYING, TRANSFER, ENTERING A SUBROUTINE, NONSTANDARD OPERATOR, AND CYCLING. THESE OPERATORS ARE DETAILED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-704 087 5/7 9/2
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

A UNIVERSAL SYNTAX CHECKER. (U)

DESCRIPTIVE NOTE: MASTER'S THESIS.
JUN 69 63P LEAHY, JOHN FRANCIS , III1

UNCLASSIFIED REPORT

DESCRIPTORS: (•PROGRAMMING LANGUAGES, SYNTAX), (•COMPUTER PROGRAMS, ACCURACY), TIME SHARING, DIGITAL COMPUTERS, SEMANTICS, STANDARDIZATION, SYMBOLS, NAVAL TRAINING, THESES (U)
IDENTIFIERS: PARSING, •SYNTAX CHECKERS (U)

A UNIVERSAL SYNTAX CHECKER WAS CONSTRUCTED TO BE UTILIZED WITH A TEXT EDITOR IN A TIME-SHARING ENVIRONMENT. THIS SYNTAX CHECKER IS A TOP-DOWN LEFT-RIGHT SLOW-BACK PARSER THAT WILL PROVIDE, WHEN SUPPLIED THE SYNTAX OF ANY LANGUAGE IN THE BACKUS-NORMAL FORM, A SYNTAX CHECK FOR ANY STRING WRITTEN IN A LANGUAGE DESCRIBED. THE PROCEDURE IS CAPABLE OF HANDLING LEFT, RIGHT, AND SELF-EMBEDDED RECURSIVE DEFINITIONS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO, /ZOML1

AD-704 568 9/2
RAND CORP SANTA MONICA CALIF

JOSTRAN: AN INTERACTIVE JOSS DIALECT FOR WRITING AND DEBUGGING FORTRAN PROGRAMS. (U)

MAR 70 14P GRAHAM, W. R. ;MACNEILAGE, D. C. ;
REPT. NO. RM-6248-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DIGITAL COMPUTERS), PROGRAMMING(COMPUTERS), COMPUTATIONAL LINGUISTICS (U)
IDENTIFIERS: JOSTRAN PROGRAMMING LANGUAGE, JOSS, FORTRAN (U)

THE DOCUMENT GIVES A DESCRIPTION OF JOSTRAN, A JOSS DIALECT THAT EXPEDITES THE CONSTRUCTION OF FORTRAN PROGRAMS. JOSS IS AN INTERACTIVE, ON-LINE COMPUTER SYSTEM. JOSS-LANGUAGE PROGRAMS ARE LIST-PROCESSED; I.E., EACH STATEMENT IS INTERPRETED AT EXECUTION TIME. FORTRAN IS THE PRINCIPAL LANGUAGE FOR PROGRAMMING DIGITAL COMPUTERS TO PERFORM NUMERICAL CALCULATIONS, THE JOSS LANGUAGE PERMITS GREATER FLEXIBILITY AND SUBTLETY, BUT FORTRAN CAN HANDLE LARGER CALCULATIONS. JOSTRAN, A SPECIFIED FORTRAN-COMPATIBLE DIALECT OF JOSS, COMBINES THE ADVANTAGES OF BOTH LANGUAGES. IT ALLOWS THE USER TO EXPLOIT JOSS'S INTERACTIVE, LIST-PROCESSING FACILITIES WHILE WRITING AND DEBUGGING A PROGRAM, AND FACILITATES THE TRANSLATION OF THE JOSTRAN PROGRAM INTO FORTRAN. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-706 031 9/2
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

AN IMPLEMENTATION OF LISP 1.5 FOR THE IBM 360/67 COMPUTER. (U)

DESCRIPTIVE NOTE: MASTER'S THESIS,
DEC 69 99P GENTRY, DONALD GUNN ;

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, OPERATION), DATA PROCESSING SYSTEMS, TIME SHARING, COMPUTATIONAL LINGUISTICS, CONTROL SEQUENCES, SYNTAX, COMPUTER PROGRAMS, THESES (U)
IDENTIFIERS: NPS LISP PROGRAMMING LANGUAGE, LISP 1.5 PROGRAMMING LANGUAGE, LIST PROCESSING LANGUAGES (U)

THE DESIGN AND IMPLEMENTATION OF THE NPS LISP PROGRAMMING SYSTEM IS DESCRIBED. NPS LISP IS AN INTERACTIVE VERSION OF LISP 1.5, A SOPHISTICATED LIST PROCESSING AND SYMBOL MANIPULATION COMPUTER LANGUAGE. NPS LISP WAS IMPLEMENTED IN PL/I FOR OPERATION UNDER THE CP/CMS TIME-SHARING SYSTEM ON THE IBM 360/67 COMPUTER. IT IS AN INTERPRETIVE SYSTEM PATTERNED AFTER 7090 LISP. MOST OF THE FEATURES OF 7090 LISP ARE INCLUDED IN NPS LISP. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-706 741 9/2
STANFORD UNIV CALIF STANFORD ELECTRONICS LABS

AN APL MACHINE. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
FEB 70 213P ABRAMS,PHILIP S. ;
REPT. NO. TR-3, SU-SEL-70-017
CONTRACT: NONR-225(83), AT(04-3)-515
PROJ: NR-373-360

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTERS, DESIGN), (*PROGRAMMING LANGUAGES, COMPUTER LOGIC), COMPUTATIONAL LINGUISTICS, SEMANTICS, CONTROL SEQUENCES, MATHEMATICAL LOGIC, THESES (U)
IDENTIFIERS: APL PROGRAMMING LANGUAGE (U)

THE DISSERTATION PROPOSES A DESIGN FOR A MACHINE STRUCTURE WHICH IS APPROPRIATE FOR APL AND WHICH EVALUATES PROGRAMS IN THE LANGUAGE EFFICIENTLY. THE APPROACH TAKEN IS TO STUDY THE SEMANTICS OF APL OPERATORS AND DATA STRUCTURES RIGOROUSLY AND ANALYTICALLY. A COMPACTLY REPRESENTABLE STANDARD FORM IS EXHIBITED FOR SELECT EXPRESSIONS, WHICH ARE COMPOSED OF OPERATORS WHICH ALTER THE SIZE AND ORDERING OF ARRAY STRUCTURES. IN ADDITION, A SET OF TRANSFORMATIONS IS PRESENTED SUFFICIENT TO DERIVE THE EQUIVALENT STANDARD FORM FOR ANY SELECT EXPRESSION. THE STANDARD FORM AND TRANSFORMATIONS ARE THEN EXTENDED TO INCLUDE EXPRESSIONS CONTAINING OTHER APL OPERATORS. BY APPLYING THE STANDARD FORM TRANSFORMATIONS TO STORAGE ACCESS FUNCTIONS FOR ARRAYS, SELECT EXPRESSIONS IN THE MACHINE CAN BE EVALUATED WITHOUT HAVING TO MANIPULATE ARRAY VALUES! THIS PROCESS IS CALLED BEATING. DRAG-ALONG IS A SECOND FUNDAMENTAL PROCESS WHICH DEFERS OPERATIONS ON ARRAY EXPRESSIONS, MAKING POSSIBLE SIMPLIFICATIONS OF ENTIRE EXPRESSIONS THROUGH BEATING AND ALSO LEADING TO MORE EFFICIENT EVALUATIONS OF ARRAY EXPRESSIONS CONTAINING SEVERAL OPERATIONS. THE APL MACHINE CONSISTS OF TWO SEPARATE SUB-MACHINES SHARING THE SAME MEMORY AND REGISTERS. THE D-MACHINE APPLIES BEATING AND DRAG-ALONG TO DEFER SIMPLIFIED PROGRAMS WHICH THE E-MACHINE THEN EVALUATES. THE MAJOR MACHINE REGISTERS ARE STACKS, AND PROGRAMS ARE ORGANIZED INTO LOGICAL SEGMENTS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMLI

AD-706 805 9/2
CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER SCIENCE

MORE ON SIMULATION LANGUAGES AND DESIGN METHODOLOGY FOR COMPUTER SYSTEMS, (U)

69 6P PARNAS,DAVID L. I

CONTRACT: F44620-67-C-0058
PROJ: AF-9718
MONITOR: AFOSR 70-1564TR

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN PROCEEDINGS, SPRING JOINT COMPUTER CONFERENCE, 14-16 MAY 1969, BOSTON, MASS, P739-743 1969.

DESCRIPTORS: (*COMPUTERS, DESIGN), (*PROGRAMMING LANGUAGES, SIMULATION), COMPUTATIONAL LINGUISTICS, MODELS(SIMULATIONS) (U)
IDENTIFIERS: SODAS PROGRAMMING LANGUAGE, *SIMULATION LANGUAGES (U)

THE PAPER EXPLORES BASIC DESIGN METHODS FOR COMPUTER SYSTEMS AND EXTENDS A PRIOR SIMULATION APPROACH. THE DESIGN OF COMPUTER SYSTEMS CONSISTING OF AT LEAST TWO (AND OFTEN MORE) LEVELS OF HARDWARE AND SOFTWARE IS DISCUSSED. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-707 356 9/2
CALIFORNIA UNIV BERKELEY

CONDITIONAL CONVERSATIONAL COMMAND PROCESSING. (U)

MAY 69 19P GRANT.CHARLES A. 1
REPT. NO. P-14

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SPONSORED IN PART BY ADVANCED RESEARCH PROJECTS AGENCY, WASHINGTON, D. C.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, TIME SHARING), (*TIME SHARING, *PROGRAMMING(COMPUTERS)), MAN-MACHINE SYSTEMS, PROGRAMMING LANGUAGES, INTERACTIONS, EFFICIENCY (U)

A GENERAL PROGRAMMING FACILITY IS PROPOSED FOR COMMUNICATION WITH THE INTERACTIVE COMMAND LANGUAGES OF TIME-SHARING SYSTEMS IN AN ATTEMPT TO OVERCOME SOME OF THE CURRENT LIMITATIONS OF DATA EXCHANGE BETWEEN MAN AND MACHINE. COMMANDS MAY BE CONSTRUCTED IN AN ARBITRARY WAY IN A STRING PROCESSING LANGUAGE AND THEN PROCESSED AS IF TYPED TO A CONSOLE BY A USER. THE OUTPUT RESULTING FROM THE SENT COMMANDS MAY BE DISSECTED AND EXAMINED TO DETERMINE SUBSEQUENT ACTION. A SET OF FUNCTIONS TO ACCOMPLISH THE ABOVE WHICH COULD BE EMBEDDED INTO ANY STRING PROCESSING LANGUAGE IS SUGGESTED, AND NECESSARY INFORMATION PERTINENT TO IMPLEMENTATION OF THE FACILITY ON EXISTING TIME-SHARING SYSTEMS IS GIVEN. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML/

AD-708 727 9/2
SYRACUSE UNIV N Y

LARGE SCALE INFORMATION PROCESSING SYSTEMS, VOLUME III. INVESTIGATIONS IN COMPUTER LANGUAGES. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. 15 JUL 67-15 JAN 70,
MAY 70 145P FOSTER,G. /STABLER,E. /
OFFEK,H. /ROSSMANN,G. /
CONTRACT: F30602-68-C-0013
PROJ: AF-5581
TASK: 558102
MONITOR: RADC TR-70-80-VOL-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-708 726, AND VOLUME 4, AD-708 728.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, DIGITAL SYSTEMS), (*PROGRAMMING LANGUAGES, SCIENTIFIC RESEARCH), TRANSFORMATIONS (U)

CONTENTS: A PROGRAMMING LANGUAGE--MANIPULATION OF DATA STRUCTURES AND SOME PROPOSED EXTENSIONS; SYSTEM DESCRIPTION LANGUAGES; MICROPROGRAM TRANSFORMATIONS; GRAPH DESCRIPTION LANGUAGE; PROGRAM SCHEMATA AND MICROPROGRAM TRANSFORMATION. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-709 177 9/2
RAND CORP SANTA MONICA CALIF

JASP: A SIMULATION LANGUAGE FOR A TIME-SHARED SYSTEM, (U)

JUN 70 127P PRITSKER, A. ALAN B. ;
REPT. NO. RM-6279-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (•PROGRAMMING LANGUAGES, DESIGN), DATA PROCESSING SYSTEMS, MATHEMATICAL MODELS, TIME SHARING, INSTRUCTION MANUALS, INFORMATION RETRIEVAL, QUEUEING THEORY (U)
IDENTIFIERS: •JASP PROGRAMMING LANGUAGE, JOSS PROGRAMMING LANGUAGE, SIMULATION LANGUAGES (U)

A COMBINATION USER'S MANUAL AND PROGRAMMER'S GUIDE IS PROVIDED FOR JASP, A SIMULATION LANGUAGE FOR USE ON THE JOSS TIME-SHARED SYSTEM. WRITTEN IN JOSS LANGUAGE, JASP PROVIDES STANDARD ROUTINES FOR PERFORMING FUNCTIONS THAT ARE COMMON TO MANY SIMULATIONS: INITIALIZATION; TIME AND EVENT CONTROL; INFORMATION STORAGE AND RETRIEVAL; PERFORMANCE DATA COLLECTION; SUMMARY, MONITORING, AND ERROR REPORTING; AND RANDOM DEVIATE GENERATION. THE ROUTINES FOR PERFORMING EACH OF THESE FUNCTIONS ARE DESCRIBED, AS WELL AS THE SPECIALLY DEFINED JOSS VARIABLES USED BY JASP. THE JASP FRAMEWORK FOR CREATING A SIMULATION MODEL FOLLOWS THAT USED IN SIMSCRIPT AND GASP. SIMULATIONS OF A SIMPLE QUEUEING SYSTEM AND A MAN-MACHINE PRICE AND INVENTORY SYSTEM ARE USED TO ILLUSTRATE AREAS FOR WHICH JASP IS DESIGNED. THE MEMORANDUM PROVIDES COMPLETE DOCUMENTATION AND READY-REFERENCE FOR JASP STATEMENT TYPES, PART INTERACTIONS, AND JOSS CODING. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML;

AD-709 187 9/2
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB.

GRAPHICS. (U)

DESCRIPTIVE NOTE: SEMIANNUAL TECHNICAL SUMMARY REPT. 1 DEC 69-31 MAY 70.
MAY 70 27P FORGIE, JAMES W. ;
CONTRACT: AF 19(628)-5167, ARPA ORDER-691
MONITOR: ESD TR-70-151

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-700 316.

DESCRIPTORS: (*DIGITAL COMPUTERS, DISPLAY SYSTEMS), (*PROGRAMMING(COMPUTERS), *GRAPHICS), (*INTEGRATED CIRCUITS, DESIGN), TIME SHARING, PROGRAMMING LANGUAGES, MAN-MACHINE SYSTEMS, INPUT-OUTPUT DEVICES, FLOW CHARTING (U)
IDENTIFIERS: TX2 COMPUTER, *COMPUTER GRAPHICS, COMPUTER AIDED DESIGN (U)

SOFTWARE DESIGN FOR THE TERMINAL SUPPORT PROCESSOR (TSP) SYSTEM HAS CONCENTRATED ON THE SPECIFICATION OF A LANGUAGE CALLED LIL (FOR LOCAL INTERACTION LANGUAGE), DESIGNED FOR INTERPRETATION BY A MICRO-PROCESSOR IN THE TSP SYSTEM, LIL IS A GENERAL-PURPOSE LANGUAGE WITH PRIMITIVES FOR MANIPULATING DISPLAY STRUCTURES AND HANDLING MESSAGE-ORIENTED INPUT-OUTPUT. THE USER SPECIFICATIONS FOR LIL ARE NOW AVAILABLE AND ARE PRESENTED HERE IN CONSIDERABLE DETAIL. A NEW MECHANISM FOR TRIGGERING A USER PROGRAM AT INTERRUPT LEVEL HAS BEEN IMPLEMENTED ON TX-2. THE MECHANISM USES SIGNALS DERIVED FROM HARDWARE DEVICES WHICH CAN MONITOR THE STATE OF TX-2 CONTROL REGISTERS. AN EXPERIMENTAL INTERACTIVE PROGRAM HAS BEEN WRITTEN TO ILLUSTRATE ONE APPLICATION AREA FOR THE NEW FACILITY: SOFTWARE MEASUREMENT. A NEW CHARACTER GENERATOR HAS BEEN INSTALLED ON TX-2, THE STORAGE SCOPE EDITOR ON TX-2 HAS BEEN REFINED AND EXTENDED ON THE BASIS OF USER EXPERIENCE. CURSOR VISIBILITY HAS BEEN IMPROVED BY FLASHING THE CURSOR AT A RATE OF SIX PER SECOND. THE BASIC COMBINED PROGRAMMING LANGUAGE (BCPL) COMPILER ON TX-2 HAS BEEN OPTIMIZED, AN OVERALL COMPILATION SPEED IMPROVEMENT OF 374 PERCENT HAS BEEN ACHIEVED IN PART BY MAKING USE OF THE NEW PERFORMANCE MEASUREMENT TOOLS NOW AVAILABLE.

(U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-709 224 9/2
RCA LABS PRINCETON N J

ON THE IMPLEMENTATION OF THE DESCRIPTIVE DATA BASE, BASED ON CDL1, (U)

FEB 70 30P SRINIVASAN,CHITOOR V. ;
REPT. NO. SCIENTIFIC-4
CONTRACT: F19628-68-C-0070
PROJ: AF-5632
TASK: 563202
MONITOR: AFCRL 70-0184

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING SYSTEMS; PROGRAMMING LANGUAGES), SYNTAX, SIMULATION, DESIGN, INFORMATION RETRIEVAL (U)
IDENTIFIERS: CDL1 PROGRAMMING LANGUAGE, RCA SPECTRA 70 COMPUTERS, FILE STRUCTURES (U)

IN PREVIOUS REPORTS, CDL1 -- A COMPUTER DESCRIPTION LANGUAGE -- HAS BEEN DEFINED AND DISCUSSED. THE REPORT DISCUSSES THE IMPLEMENTATION OF A SYSTEM OF PROGRAMS, ON THE RCA SPECTRA 70 COMPUTERS, TO GENERATE APPROPRIATE FILE STRUCTURES FROM COMPUTER DESCRIPTIONS WRITTEN IN CDL1. THIS TRANSLATION TO A DDB -- DESCRIPTIVE DATA BASE -- INVOLVES SYNTACTIC ANALYSIS AND A CERTAIN AMOUNT OF CHECKING FOR INTERNAL CONSISTENCY, AS WELL AS THE CREATION OF DIRECTORY ENTRIES, ETC. ONCE THE TYPE OF DDB'S DESCRIBED IN THIS REPORT CAN BE GENERATED, A VARIETY OF DESIGN-AID SYSTEMS CAN BE BASED UPON THEM, SAVING A DUPLICATION OF EFFORT, GUARANTEEING AN INTEGRATED OVERALL SYSTEM, AND AVOIDING BUILT-IN OBSOLESCENCE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-710 262 9/2
RAND CORP SANTA MONICA CALIF

THE IMPACT OF FUTURE DEVELOPMENTS IN COMPUTER TECHNOLOGY, (U)

JUN 70 17P GRAHAM,WILLIAM R. 1
REPT. NO. P-4401

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE JOINT AIR FORCE AND LOCKHEED AIRCRAFT CONFERENCE ON COMPUTER-ORIENTED ANALYSIS OF SHELL STRUCTURES ON 13 AUG 70.

DESCRIPTORS: (*COMPUTERS, REVIEWS), DESIGN, PROGRAMMING LANGUAGES, COMPUTER LOGIC (U)
IDENTIFIERS: ILLIAC 4 COMPUTERS, ILLIAC (U)

COMPUTER HARDWARE DESIGN IS PROGRESSING AT SUCH A RATE THAT IT IS DIFFICULT TO UNDERSTAND WHERE IT IS NOW, MUCH LESS WHERE IT IS GOING. ON THE OTHER HAND, COMPUTER SOFTWARE STILL EXISTS ONLY AS A PRE-SCIENCE TECHNOLOGY, AND THEREFORE IT IS VERY DIFFICULT TO MAKE ANY GENERALIZATIONS ABOUT ITS STATUS, OTHER THAN TO SAY THAT IT IS A SUFFICIENTLY PRIMITIVE ART TO REQUIRE THE NAME 'COMPUTER SCIENCES' IN MOST CENTERS OF RESEARCH. THE PAPER MAKES AN ATTEMPT TO MOVE AWAY FROM ANALYZING COMPUTER CAPABILITY ONLY IN TERMS OF RAW HARDWARE SPEEDS, AND TRIES TO GIVE A ROUNDED PICTURE OF THE DISADVANTAGES AS WELL AS THE ADVANTAGES OF SOME RADICALLY NEW MACHINE DESIGNS. THE POINT OF VIEW IS THAT OF A PERSON INTERESTED IN SOLVING VERY LARGE AND COMPLEX PROBLEMS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-710 424 5/9 9/2
FLORIDA STATE UNIV TALLAHASSEE COMPUTER-ASSISTED INSTRUCTION CENTER

APL: AN ALTERNATIVE TO THE MULTI-LANGUAGE ENVIRONMENT FOR EDUCATION. (U)

AUG 70 23P LIPPERT, HENRY T. ; HARRIS, EDWARD V. ;
REPT. NO. CAI-SYSTEMS MEMO-4
CONTRACT: N00014-68-A-0494
PROJ: NR-154-280

UNCLASSIFIED REPORT

DESCRIPTORS: (*EDUCATION, PROGRAMMING(COMPUTERS)), (*PROGRAMMING LANGUAGES, EFFECTIVENESS), DESIGN, COMPUTERS, COSTS, ANALYSIS, TIME, EFFICIENCY (U)
IDENTIFIERS: *COMPUTER AIDED INSTRUCTION, *APL(A PROGRAMMING LANGUAGE) (U)

THE DIVERSE REQUIREMENTS FOR COMPUTING FACILITIES IN EDUCATION PLACES HEAVY DEMANDS UPON AVAILABLE RESOURCES. MULTIPLE OR VERY LARGE COMPUTERS CAN SUPPLY SUCH DIVERSE NEEDS BUT THIS IS NOT A POSSIBLE SOLUTION FOR MANY INSTITUTIONS BECAUSE OF COST FACTORS. SMALL COMPUTERS WHICH SERVE A FEW SPECIFIC NEEDS MAY BE AN ECONOMICAL ANSWER, HOWEVER, TO FOLLOW THIS SECOND APPROACH IN AN ATTEMPT TO SERVE OPERATIONALLY A SIGNIFICANT SEGMENT OF STUDENTS, THE MULTIPLICITY OF COMPUTER INSTALLATIONS WITH THEIR OPERATIONS STAFFING REQUIREMENTS WILL PROBABLY PROVE TO BE A FALSE ECONOMY. A PROGRAMMING LANGUAGE, OR 'APL' AS IT IS COMMONLY KNOWN, IS EXAMINED AS AN ALTERNATIVE TO THIS DILEMMA FACING THE COMPUTING CENTER DIRECTOR. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML/

AD-711 077 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF

SPACE PROGRAMMING LANGUAGE/MARK IV (SPL/MK IV). REFERENCE MANUAL. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.
AUG 70 312P
CONTRACT: F04701-70-C-0022
MONITOR: SAMSO TR-70-349

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: CONTINUATION OF CONTRACT F04701-68-C-0135.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INSTRUCTION MANUALS), SYNTAX, COMPILERS, CONTROL SEQUENCES, INPUT-OUTPUT DEVICES, SPECIAL PURPOSE COMPUTERS (U)
IDENTIFIERS: SPACE PROGRAMMING LANGUAGE/MARK 4, IBM 360 COMPUTERS, CDC 6000 SERIES COMPUTERS (U)

THE REPORT IS A REFERENCE PROGRAMMER'S MANUAL FOR SPACE PROGRAMMING LANGUAGE/MARK IV (SPL/MK IV). SPL/MK IV HAS BEEN IMPLEMENTED ON THE IBM 360 SERIES COMPUTERS AND WILL BE IMPLEMENTED ON THE CDC 6000 SERIES. THE MANUAL INCLUDES A DESCRIPTION OF ALL THE SPL FORMS, THEIR INTERPRETATION, NUMEROUS EXAMPLES, AND COMPILER DIAGNOSTICS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-711 378 5/9 5/8 9/2
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS

INFORMATION PROCESSING MODELS AND COMPUTER AIDS FOR HUMAN PERFORMANCE. (U)

DESCRIPTIVE NOTE: SEMIANNUAL TECHNICAL REPT. NO. 7, 1 JAN-31 JUL 70,
JUL 70 267P SWETS,JOHN A. ;KALIKOW, DANIEL N. ;KLATT,DENNIS H. ;GRIGNETTI,MARIO C. ;MILLER,DUNCAN C. ;
REPT. NO. BBN-2008
CONTRACT: F44620-67-C-0033, ARPA ORDER-890-4
MONITOR: AFOSR TR-71-0752

UNCLASSIFIED REPORT

DESCRIPTORS: (*MEMORY, *LEARNING), (*LANGUAGE, *PROGRAMMED INSTRUCTION), (*MAN-MACHINE SYSTEMS, MODELS(SIMULATIONS)), (*PROGRAMMING LANGUAGES, *PROBLEM SOLVING), TEACHING METHODS, PROGRAMMING(COMPUTERS), MATHEMATICAL MODELS, DATA PROCESSING SYSTEMS, GAME THEORY (U)
IDENTIFIERS: INFORMATION PROCESSING(PSYCHOLOGY), MAN COMPUTER INTERACTIONS, *COGNITION, *COMPUTER AIDED INSTRUCTION, SPANISH LANGUAGE (U)

PROGRESS IS REPORTED ON FOUR RESEARCH TASKS, AN EXPERIMENT WAS DESIGNED TO TEST THE EFFECTIVENESS OF OUR COMPUTER-BASED PHONOLOGY INSTRUCTIONAL SYSTEM FOR SECOND-LANGUAGE LEARNING, USING SPANISH-SPEAKING STUDENTS WITH ENGLISH AS THE TARGET LANGUAGE. IN RESEARCH ON MODELS OF HUMAN-COMPUTER INTERACTIONS, EXPERIMENTS WERE PERFORMED DEMONSTRATING THAT THE PROVISION OF CERTAIN INCENTIVES TO THE USERS OF A TIME-SHARING SYSTEM CAN HAVE THE EFFECT OF SHAPING PATTERNS OF USER-CHOICE BEHAVIOR WHICH IMPROVE THE OVERALL EFFICIENCY OF THE SYSTEM. THE INVESTIGATION OF PROGRAMMING LANGUAGES AS A TOOL FOR COGNITIVE RESEARCH HAS LED TO THE DEVELOPMENT AND CONSTRUCTION OF A WIRELESS COMPUTER-CONTROLLED VEHICLE TO AID STUDENTS IN CONCEPTUALIZING PREVIOUSLY ABSTRACT PROCESSES IN PROBLEM SOLVING. IN ADDITION, AN EXPERIMENT WAS CONDUCTED IN TEACHING THE PROGRAMMING LANGUAGE LOGO TO A GROUP OF HARD-TO-TEACH STUDENTS, AND THE VALIDITY OF STANDARD MEASUREMENTS OF ACHIEVEMENT LEVEL WAS INVESTIGATED. STUDIES OF HUMAN MEMORY AND LANGUAGE PROCESSING HAVE FURTHER ELUCIDATED THE COGNITIVE OPERATIONS INVOLVED IN THE STORAGE, RETRIEVAL, AND UTILIZATION OF FACTUAL MATERIAL. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-711 787 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF

INTRODUCTION TO SPACE PROGRAMMING LANGUAGE: IMPLEMENTATION OF SPL. (U)

DESCRIPTIVE NOTE: REPT. FOR APR-SEP 70,
SEP 70 14P
CONTRACT: F04701-70-C-0214
MONITOR: SAMSO TR-70-324

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-711 789.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, SPACECRAFT), (*COMPILERS, DESIGN), SYNTAX, DATA TRANSMISSION SYSTEMS, CONTROL SYSTEMS, DIGITAL COMPUTERS, REVIEWS (U)
IDENTIFIERS: *SPACE PROGRAMMING LANGUAGE (U)

THE SPACE AND MISSILE SYSTEMS ORGANIZATION OF THE AIR FORCE DIRECTED SYSTEM DEVELOPMENT CORPORATION TO IMPLEMENT THE SPL LANGUAGE BY PRODUCING A COMPILER. THE SPL COMPILER WAS BUILT UTILIZING A SYNTAX-DIRECTED COMPILER BUILDING TECHNIQUE. THIS COMPILER TRANSLATES SPL SOURCE STATEMENTS INTO MACHINE OR ASSEMBLY LANGUAGE CODE. TWO SPL COMPILERS HAVE BEEN BUILT TO OPERATE ON THE IBM 360 AND TO GENERATE CODE FOR THE IBM 360 AND UNIVAC 1824 COMPUTERS. FUTURE COMPILERS WILL BE DEVELOPED TO OPERATE ON THE CDC 6600 AND TO GENERATE CODE FOR THE IBM 360, CDC 6600 AND UNIVAC 1824. MARK II AND IV LANGUAGE SUBSETS ARE BEING IMPLEMENTED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-712 464 9/2
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

A STUDY OF THE EFFICIENCIES IN THE MOBILE PROGRAMMING SYSTEM. (U)

DESCRIPTIVE NOTE: MASTER'S THESIS,
JUN 69 45P HENNINGER,ERNEST HENRY I

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), MULTIPLE OPERATION), COMPUTER PROGRAMS, DIGITAL COMPUTERS, DATA TRANSMISSION SYSTEMS, *PROGRAMMING LANGUAGES, EFFICIENCY, THESES (U)
IDENTIFIERS: MOBILE PROGRAMMING SYSTEM, SNOBOL 4 PROGRAMMING LANGUAGE, MACROPROGRAMMING (U)

THE MOBILE PROGRAMMING SYSTEM WAS DEVELOPED TO PROVIDE THE CAPABILITY OF MOVING PROGRAMS FROM ONE COMPUTING MACHINE TO ANOTHER WITH A MINIMUM OF DIFFICULTY. THIS PAPER IS AN INITIAL STUDY OF THE EFFICIENCIES INVOLVED IN THE DEVELOPMENT OF A PROCESSOR FOR A PROGRAMMING LANGUAGE VIA THE SYSTEM. TO THIS END, A LANGUAGE PROCESSOR WAS IMPLEMENTED THROUGH THE SYSTEM ON A PARTICULAR MACHINE (IBM 360 MOD 67), AND COMPARISONS MADE WITH THE SAME LANGUAGE PROCESSOR IMPLEMENTED DIRECTLY ON THE SAME MACHINE. ALTHOUGH THE RESULTS OF THIS PAPER ARE TAKEN FROM THIS SPECIFIC CASE, THEY GIVE AN INDICATION OF THE RELATIVE EFFICIENCIES THAT COULD BE EXPECTED FROM OTHER PROCESSORS IMPLEMENTED IN A SIMILAR WAY. A SIGNIFICANT SIDE BENEFIT OF THE STUDY IS A SIMPLIFIED IMPLEMENTATION PROCESS FOR THE SNOBOL4 PROGRAMMING LANGUAGE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML;

AD-712 517 9/2
HOUSTON UNIV TEX CULLEN COLL OF ENGINEERING

STIL SYSTEMS MANUAL, (U)

SEP 69 117P DONAGHEY, CHARLES E. ;OZKUL, OSMAN S. ;
REPT. NO. THEMIS-RE-12-69
CONTRACT: N00014-68-A-0151

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON INFORMATION PROCESSING SYSTEMS.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, STATISTICAL ANALYSIS), COMPUTER PROGRAMS, ALGORITHMS, PROBABILITY, DATA PROCESSING SYSTEMS, INSTRUCTION MANUALS (U)
IDENTIFIERS: STIL PROGRAMMING LANGUAGE, FORTRAN, THEMIS PROJECT (U)

THERE ARE AN ABUNDANCE OF STATISTICAL PROGRAMS AND SUBROUTINES AVAILABLE TO THE COMPUTER USER, HOWEVER, FOR THE OCCASIONAL COMPUTER USER, OR THE BEGINNING STATISTICS STUDENT, THE USE OF THESE PROGRAMS AND SUBROUTINES CAN PROVE TO BE QUITE COMPLEX. FOR THIS REASON STIL (STATISTICAL INTERPRETIVE LANGUAGE) HAS BEEN DEVELOPED. THIS LANGUAGE ALLOWS A USER TO QUICKLY AND EASILY WRITE PROGRAMS THAT SOLVE A MODERATE RANGE OF STATISTICAL AND PROBABILITY PROBLEMS. THIS MANUAL LISTS THE STIL INTERPRETER AND DESCRIBES HOW THE SYSTEM OPERATES. THE INTERPRETER CONSISTS OF A MAIN PROGRAM AND 33 SUB-PROGRAMS ALL WRITTEN IN FORTRAN IV. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-713 079 9/2
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

A BASIC LIST-ORIENTED INFORMATION STRUCTURES SYSTEM (BLISS). (U)

DESCRIPTIVE NOTE: MASTER'S THESIS,
JUN 70 177P THORELL,CHARLES SCOTT ;
POTEAT,WILLIAM OTTO , JR;

UNCLASSIFIED REPORT

DESCRIPTORS: (•PROGRAMMING LANGUAGES, DESIGN), COMPUTER PROGRAMS, SYNTAX, ALGORITHMS, COMPUTERS, TIME SHARING, THESES (U)
IDENTIFIERS: BLISS COMPUTER CODE, •LIST PROCESSING LANGUAGES, ON LINE COMPUTERS (U)

THE DESIGN AND IMPLEMENTATION OF THE BASIC LIST-ORIENTED INFORMATION STRUCTURES SYSTEM IS DESCRIBED. MANIPULATION OF LIST STRUCTURES IN AN EFFICIENT AND COGENT MANNER IS THE SYSTEM FUNCTION. THE LANGUAGE, WHICH IS PATTERNED AFTER BELL TELEPHONE LABORATORIES' L6, IS GENERATED FROM A PRECEDENCE GRAMMAR FOR RAPID SYNTAX ANALYSIS. A COMPILER PRODUCES CODE FOR A PSEUDO-MACHINE THAT IS DESIGNED TO EFFECTIVELY CARRY OUT LIST-ORIENTED FUNCTIONS. DYNAMIC STORAGE ALLOCATION AND STRUCTURE DEFINITION ARE SIGNIFICANT EXECUTION-TIME FEATURES. THE IMPLEMENTATION, WRITTEN IN PL/I, IS FOR OPERATION UNDER THE CP/CMS TIME-SHARING SYSTEM ON THE IBM 360/67. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-714 108 9/2
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB

A USER'S GUIDE TO LISTAR, (U)

OCT 70 29P ARMENTI, AMEDIO W. ; GALLEY, STUART W. ;

REPT. NO. LINCOLN MANUAL-94
CONTRACT: F19628-70-C-0230
MONITOR: ESD TR-70-317

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH NATIONAL LIBRARY OF MEDICINE, WASHINGTON, D. C., CONTRACT NLM-69-7.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *INSTRUCTION MANUALS), (*TEST FACILITIES, DATA PROCESSING SYSTEMS), INFORMATION RETRIEVAL, COMPUTER STORAGE DEVICES, TIME SHARING, DATA TRANSMISSION SYSTEMS, TELETYPE SYSTEMS, DATA STORAGE SYSTEMS (U)
IDENTIFIERS: LISTAR COMPUTER CODE, IBM 360/67 COMPUTERS (U)

THE USER'S GUIDE DESCRIBES PROCEDURES FOR LISTAR OPERATIONS. LINCOLN INFORMATION STORAGE AND ASSOCIATIVE RETRIEVAL SYSTEM (LISTAR) IS AN ON-LINE INTERACTIVE STORAGE AND RETRIEVAL SYSTEM WHICH PERMITS A USER TO DEFINE, SEARCH, MODIFY, AND CROSS ASSOCIATE DATA FILES. LISTAR RUNS UNDER THE IBM CP/CMS TIME SHARING SYSTEM OPERATING ON THE LINCOLN LABORATORY IBM 360/67 COMPUTER. LISTAR USERS COMMUNICATE TO THE SYSTEM BY WAY OF A KEYBOARD TERMINAL (IBM 2741, IBM 1050, IBM 2260, ADVANCE REMOTE DISPLAY SYSTEM (ARDS) OR TELETYPE). (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-714 140 17/7
NAVAL RESEARCH LAB WASHINGTON D C

SIMULATION MODEL FOR THE AADC. (U)

DESCRIPTIVE NOTE: MEMORANDUM REPT.,
SEP 70 18P SMITH,WILLIAM R. ;
REPT. NO. NRL-MR-2172
PROJ: WF15-241-601, NRL-70802-06.301

UNCLASSIFIED REPORT

DESCRIPTORS: (*NAVIGATION COMPUTERS, DESIGN), (*NAVAL AIRCRAFT, NAVIGATION COMPUTERS), COST EFFECTIVENESS, PROGRAMMING LANGUAGES, DIGITAL COMPUTERS (U)
IDENTIFIERS: AADC(ADVANCED AVIONICS DIGITAL COMPUTERS), ADVANCED AVIONICS DIGITAL COMPUTERS, SUNSCRIPT PROGRAMMING LANGUAGE (U)

A NAVY PROGRAM TO DEVELOP A FLEXIBLE AIRBORNE COMPUTER WHICH WILL BE COMPATIBLE WITH CHANGING AVIONICS MISSION REQUIREMENTS HAS LED TO AN EFFORT TO IMPLEMENT A COMPUTER SIMULATION OF THE PROPOSED AVIONICS SYSTEM UNDER REPRESENTATIVE PROGRAM WORKLOADS. REALISTIC MODELING OF SYSTEM SOFTWARE AND HARDWARE REQUIRES A SIMULATION WHICH REVEALS THE EFFECT OF INTERACTION BETWEEN SEGMENTS OF PROGRAM AND COMPUTER RESOURCES. THE SIMSCRIPT PROGRAMMING LANGUAGE IS BEING USED TO IMPLEMENT AN EVENT ORIENTED SIMULATION OF THE AVIONICS MULTIPROCESSOR AND ITS ATTENDANT WORKLOAD. EXAMINATION OF THE UTILIZATION OF SYSTEM RESOURCES IN THE MODEL WILL AID IN DETERMINING THE OPTIMUM COMPUTER CONFIGURATION FROM AMONG CHOICES UNDER CONSIDERATION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO, /Z0ML1

AD-714 145 9/2 9/3
IOWA UNIV IOWA CITY DEPT OF MATHEMATICS

B.I.B.I.: A SYMBOLIC LANGUAGE FOR DESCRIPTION AND SIMULATION OF LOGICAL CIRCUITS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
AUG 70 35P FANTAUZZI,GIUSEPPE ;
REPT. NO. THEMIS-UI-TR-31
CONTRACT: N00014-68-A-0500
PROJ: THEMIS-432

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON THE THEORY AND APPLICATIONS OF AUTOMATON THEORY.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), (*LOGIC CIRCUITS, DESIGN), ALGEBRAS, SEQUENTIAL ANALYSIS, COMBINATORIAL ANALYSIS, DIGITAL COMPUTERS, SIMULATION, ALGORITHMS, PROGRAMMING(COMPUTERS), MATHEMATICAL MODELS, TOPOLOGY, BINARY ARITHMETIC (U)
IDENTIFIERS: COMPUTER AIDED DESIGN, BIBI PROGRAMMING LANGUAGE, SYMBOLIC PROGRAMMING, COMPUTERIZED SIMULATION (U)

A FORMAL LANGUAGE IS STUDIED AIMED AT THE FORMAL DESCRIPTION OF ANY KIND OF BOOLEAN CIRCUIT EITHER SEQUENTIAL OR COMBINATORIAL. SUCH DESCRIPTIONS ARE INTENDED TO BE USED BOTH FOR DOCUMENTATION PURPOSES AND FOR SIMULATION ON DIGITAL COMPUTERS. FOR THIS REASON THE LANGUAGE HAS BEEN DESIGNED TO ALLOW DESCRIPTIONS BOTH SUITABLE FOR COMPUTER SIMULATION AND EASILY UNDERSTANDABLE FOR THE PEOPLE INTERESTED IN THE DESIGN OF LOGICAL CIRCUITS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-714 147 9/2
WISCONSIN UNIV MADISON MATHEMATICS RESEARCH CENTER

A SIMPLE METHOD OF ADDING A NEW DATA TYPE TO FORTRAN. (U)

DESCRIPTIVE NOTE: TECHNICAL SUMMARY REPT.,
MAY 70 127P CRARY,F. D. !LADNER,T.
D. !
REPT. NO. MRC-TSR-1065
CONTRACT: DA-31-124-ARO(D)-462

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *COMPILERS), INSTRUCTION MANUALS, DATA PROCESSING SYSTEMS, INPUT-OUTPUT DEVICES, COMPUTER PROGRAMS (U)
IDENTIFIERS: FORTRAN, CLUDGE PROGRAMMING LANGUAGE (U)

THE REPORT DESCRIBES A PRECOMPILER THAT ALLOWS THE USE OF A NONSTANDARD DATA TYPE DEFINED IN FORTRAN PROGRAMS. THE REPORT INCLUDES OPERATING INSTRUCTIONS, SPECIFICATIONS FOR SUPPORTING PACKAGES, AND A DISCUSSION OF PROGRAM OPERATION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-714 593 9/2
OHIO STATE UNIV COLUMBUS ELECTROSCIENCE LAB

TOPOLOGICAL MANIPULATION OF LINE DRAWINGS USING A PATTERN DESCRIPTION LANGUAGE. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
AUG 70 39P BREEDING,KENNETH J. !AMOSS,
JOHN O. !
REPT. NO. ESL-2768-3
CONTRACT: AF-AFOSR-1710-69
PROJ: AF-9769
MONITOR: AFOSR 70-2585TR

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, *PATTERN RECOGNITION), (*PROGRAMMING(COMPUTERS), TRANSFORMATIONS), ALGORITHMS, PROGRAMMING LANGUAGES, TOPOLOGY, VISUAL PERCEPTION, PROJECTIVE GEOMETRY, IMAGES, ROTATION, GRAPHICS (U)
IDENTIFIERS: LINE DRAWINGS, *COMPUTER GRAPHICS, PADEL PROGRAMMING LANGUAGE (U)

A LARGE PROPORTION OF THE PICTURES DEALT WITH IN COMPUTER GRAPHICS ARE LINE DRAWINGS. IN THE PROCESS OF DISPLAYING THESE DRAWINGS CERTAIN TOPOLOGICAL MANIPULATIONS SUCH AS ROTATIONS, REFLECTIONS AND SCALING MAY BE DESIRED. THE PAPER DESCRIBES HOW SUCH MANIPULATIONS MAY BE CARRIED OUT BY TRANSFORMATIONS ON STRINGS DESCRIBING THE PICTURES. THE STRING LANGUAGE USED IS A PATTERN DESCRIPTION LANGUAGE CALLED PADEL. PICTURES IN TWO AND THREE DIMENSIONAL SPACE ARE CONSIDERED. THE TRANSFORMATIONS DESCRIBED FOR TWO DIMENSIONAL PICTURES ARE ROTATIONS, REFLECTIONS ABOUT AN ARBITRARY AXIS, AND UNIFORM SCALE CHANGES. A NONUNIFORM SCALE CHANGE CONSISTING OF SCALING ALONG AN ARBITRARY LINE IS ALSO DESCRIBED. SUCH SCALING MAY BE TERMED 'RUBBER SHEET WARPING'. THE PATTERN DESCRIPTION LANGUAGE IS NEXT EXTENDED TO THREE DIMENSIONAL OBJECTS BY REPRESENTING THE BRANCH LABELS AS THREE TUPLES THE ELEMENT OF WHICH ARE THE BRANCH DIRECTION COSINES. ROTATIONS OF THE PICTURES ABOUT THE COORDINATE AXIS ARE THEN DESCRIBED. IT IS THEN SHOWN THAT THE ANGULAR RELATIONSHIPS AMONG THE BRANCHES OF THE PICTURE REMAIN INVARIENT UNDER THIS ROTATION. AN INVERSE ROTATION IS THEN INTRODUCED. PROJECTIONS OF THE PICTURE ONTO THE PRINCIPLE PLANES IS NEXT DESCRIBED FOLLOWED FINALLY BY PROJECTIONS ONTO ARBITRARY PLANES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-714 594 9/2
OHIO STATE UNIV COLUMBUS ELECTROSCIENCE LAB

PADEL - A PATTERN DESCRIPTION LANGUAGE. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JUN 70 44P BREEDING,KENNETH J. ;
REPT. NO. ESL-2768-1
CONTRACT: AF-AFOSR-1710-69
PROJ: AF-9769
MONITOR: AFOSR 70-2586TR

UNCLASSIFIED REPORT

DESCRIPTORS: (•PROGRAMMING LANGUAGES, DESIGN), (•PATTERN RECOGNITION, DATA PROCESSING SYSTEMS), TOPOLOGY, ALGORITHMS, IMAGES, ROTATION, SYMBOLS, SYNTAX, IDENTIFICATION, PROJECTIVE GEOMETRY, VISUAL PERCEPTION, CHARACTER RECOGNITION, PROGRAMMING(COMPUTERS) (U)
IDENTIFIERS: LINE DRAWINGS, •PADEL PROGRAMMING LANGUAGE, •COMPUTER GRAPHICS (U)

A LARGE CLASS OF OPTICAL PATTERN RECOGNITION PROBLEMS MAY BE DESCRIBED IN TERMS OF LINE DRAWINGS. SUCH LINE DRAWINGS ARE PARTICULARLY AMENABLE TO THE COMPOSITION OF STRINGS OF DESCRIPTORS WHICH MAY BE PROCESSED IN MANY WAYS TO PRODUCE PICTURE ROTATIONS, REFLECTIONS AND OTHERS AS WELL AS TO EXTRACT PATTERN FEATURES. THE PAPER DESCRIBES LINE DRAWINGS IN SYMBOL STRINGS. THE LANGUAGE IS A TRANFORMATIONAL GRAMMAR IN WHICH ELEMENTS OF THE LINE DRAWING, OR PICTURE, CORRESPOND TO ELEMENTS IN THE DESCRIPTION. THE CORRESPONDENCE IS REVERSIBLE SO THAT GIVEN A GRAMMATICALLY CORRECT STRING IN PADEL A LINE DRAWING MAY BE CONSTRUCTED. USING THE LANGUAGE, SEVERAL TOPOLOGICAL TRANSFORMATIONS ARE DESCRIBED IN WHICH THE PICTURE IS MODIFIED BY SIMPLE MANIPULATION OF THE STRINGS. FIRST THE SIMPLE TRANFORMATIONS OF ROTATIONS, REFLECTIONS, AND SCALE CHANGES ARE DESCRIBED. THEN A NON UNIFORM, ONE DIMENSIONAL SCALE CHANGES IS DESCRIBED IN WHICH THE PICTURES SCALE IS CHANGED ALONG ONE AXIS ONLY. THIS MAY BE TERMED 'RUBBER SHEET WARPING'. FINALLY THE PROCESS OF IDENTIFYING PATTERN FEATURES IS DESCRIBED. IT IS THEN SHOWN HOW PADEL MAY BE APPLIED TO THE RECOGNITION OF FIXED ORIENTED LINE DRAWINGS. THUS, THE LANGUAGE IS SHOWN TO BE VERY USEFUL IN RECOGNIAING HAND PRINTED ALPHA NUMERIC CHARACTERS. EXAMPLES OF THIS RECOGNITION PROCESS ARE GIVEN. (U)

UNCLASSIFIED /ZOML1

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0ML1

AD-714 800 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

INTERPRETING PROGRAM FOR PROBLEMS IN TRANSLATING (BESM-4). (U)

AUG 70 7P CHIKOIDZE, G. B. ;
REPT. NO. FTD-MT-24-158-70
PROJ: FTD-6050205
TASK: DIA-T68-05-02

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF AKADEMIYA NAUK GRUZINSKOI SSR, TIFLIS, SOOBSHCHANIYA, V54 N1 P37-40 1968. BY W. W. KENNEDY.

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), MACHINE TRANSLATION), COMPILERS, DIGITAL COMPUTERS, ALGORITHMS, SYNTAX, COMPUTER LOGIC, USSR, PROGRAMMING LANGUAGES (U)
IDENTIFIERS: BESM 4 COMPUTERS, TRANSLATIONS (U)

A SYSTEM IS DESCRIBED WHICH ALLOWS PARTIAL AUTOMATION OF PROGRAMMING AN ALGORITHM FOR TRANSLATING. THIS SYSTEM INTERPRETS OPERATORS OF A SPECIAL LANGUAGE, THUS, THE MANUAL PART OF THE PROGRAMMING IS REDUCED TO REWRITING THE ALGORITHM IN THIS SPECIAL LANGUAGE. THE SYSTEM HAS BEEN TESTED ON THE BESM-4 COMPUTER. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-715 372 9/2 12/2
RESEARCH ANALYSIS CORP MCLEAN VA

A LANGUAGE FOR NONLINEAR PROGRAMMING PROBLEMS. (U)

DESCRIPTIVE NOTE: TECHNICAL PAPER,
NOV 70 51P PUGH,ROBERT E. ;
REPT. NO. RAC-TP-407
CONTRACT: DAHC19-69-C-0017
PROJ: RAC-010,124

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *NONLINEAR PROGRAMMING), ALGEBRAS, MATHEMATICAL ANALYSIS, PROGRAMMING(COMPUTERS), DIGITAL COMPUTERS, MATRIX ALGEBRA (U)

THE PAPER DESCRIBES AN ALGEBRAIC-LIKE LANGUAGE FOR NONLINEAR PROGRAMMING PROBLEMS AND THE RATIONALE FOR THE COMPUTER IMPLEMENTATION OF THE LANGUAGE. THE LANGUAGE PROVIDES FOR THE COMPUTATION OF THE FUNCTION VALUES, GRADIENTS, AND SECOND PARTIAL DERIVATIVES OF THE FUNCTIONS OF A PROGRAMMING PROBLEM AT SPECIFIED POINTS IN SPACE. EACH FUNCTION IS TRANSLATED INTO AN EXPLICIT 'FACTORABLE' FORM WHEREBY IT IS EXPRESSED AS THE TRANSFORMATION OF THE SUM OF A SET OF PRODUCTS AND EACH FACTOR OF EACH PRODUCT MAY IN TURN BE A TRANSFORMATION OF THE SUM OF A SET OF PRODUCTS. THIS HIERARCHICAL REPRESENTATION TERMINATES WHEN A FACTOR OF A PRODUCT IS A FUNCTION OF A SINGLE VARIABLE. FOR A GIVEN POINT IN SPACE THE VALUE, GRADIENT, AND SECOND PARTIALS OF EACH FUNCTION ARE COMPUTED IN TURN SO THAT EACH COMPUTATIONAL STEP MAKES USE OF THE RESULTS FROM THE PRECEDING STEP. THE MATRIX OF SECOND PARTIALS FOR A FUNCTION AT A POINT IS REPRESENTED AS A SET OF VECTOR OUTER PRODUCTS, THE VECTORS HAVING RESULTED FROM THE GRADIENT COMPUTATION, PLUS A DIAGNONAL MATRIX. THE ORGANIZATION AND EXPERIENCE WITH THE OPERATIONAL COMPUTER PROGRAM WHICH IMPLEMENTS THE LANGUAGE AND TIES IT TO SUMT ARE DESCRIBED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-715 661 9/2
CULLEN COLL OF ENGINEERING HOUSTON TEX

STRACHEY'S GENERAL PURPOSE MACROGENERATOR IN FORTRAN. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
SEP 70 51P HSU,JU-TUNG ;NEWHOUSE, ALBERT ;
REPT. NO. RS-3-70
CONTRACT: N00014-68-A-0151

UNCLASSIFIED REPORT

DESCRIPTORS: (•PROGRAMMING(COMPUTERS), COMPILERS), PROGRAMMING LANGUAGES, DATA PROCESSING SYSTEMS, ALGORITHMS, SYNTAX, DESIGN, SUBROUTINES (U)
IDENTIFIERS: FORTRAN, •MACROPROGRAMMING, THEMIS PROJECT (U)

A GENERAL PURPOSE MACRO PROCESSOR ORIGINALLY DEVELOPED BY C. STRACHEY HAS BEEN IMPLEMENTED IN THE FORTRAN LANGUAGE TO PERMIT UTILIZATION IN A MACHINE INDEPENDENT ENVIRONMENT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-716 486 9/2
COMPUTER SYMBOLIC INC WASHINGTON D C

A PROGRAMMING SYSTEM FOR THE CONSTRUCTION OF EFFICIENTLY-RUNNING HARDWARE-INDEPENDENT GENERAL SYNTAX ANALYSIS PACKAGES. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. 15 AUG 68-14 NOV 69.
OCT 70 258P KROHN,KENNETH B. ;KRITT, BRIAN ;
CONTRACT: F30602-69-C-0054
MONITOR: RADC TR-69-453

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, SYNTAX); (*COMPUTERS, DESIGN), ALGORITHMS, DIGITAL COMPUTERS, SUBROUTINES (U)
IDENTIFIERS: DEBUGGING(COMPUTERS), LDL PROGRAMMING LANGUAGE, GEMAP PROGRAMMING LANGUAGE, MACROPROGRAMMING (U)

A PILOT SYSTEM HAS BEEN DEVELOPED AND IMPLEMENTED FOR USE IN THE CONSTRUCTION OF EFFICIENTLY-RUNNING HARDWARE-INDEPENDENT SYNTAX ANALYSIS PACKAGES. THIS SYSTEM CONSISTS OF THE FOLLOWING: (1) A PROGRAMMING LANGUAGE, THE LANGUAGE DESCRIPTION LANGUAGE (LDL), WHICH IS SUITED TO THE CONSTRUCTION OF GENERAL REPRESENTATIONS OF THE SYNTAX OF PROGRAMMING LANGUAGES; (2) A COMPILER FOR LDL, WRITTEN IN THE GEMAP LANGUAGE FOR THE GE-645 COMPUTER AT THE ROME AIR DEVELOPMENT CENTER; AND (3) A PROGRAM FOR THE DETERMINATION AND IMPLEMENTATION OF OPTIMIZING MACROSUBSTITUTIONS, WHICH COLLAPSES ANY GENERAL HARDWARE-INDEPENDENT LDL PROGRAM INTO AN EFFICIENTLY-RUNNING, CONSOLIDATED FORM. IN ADDITION, IN ORDER TO DEMONSTRATE THE VALIDITY AND OPERATION OF THE SYSTEM, AN ALGOL 60 TRANSLATOR HAS BEEN WRITTEN IN LDL TO WHICH THE OPTIMIZATION PROGRAM HAS BEEN APPLIED. THIS SAMPLE LDL PROGRAM HAS DEMONSTRATED BOTH THE USE OF LDL IN DESCRIBING THE SYNTAX OF ALGOL 60, AND THE SUCCESS OF THE SYSTEM IN OPTIMIZING LARGE-SCALE SYNTAX ANALYSIS PROGRAMS TO PRODUCE CONSOLIDATED SYNTAX DESCRIPTIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-716 514 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

A COMPILER FOR THE DIGITAL COMPUTER 'MINSK-12' FROM THE EAN LANGUAGE. (U)

OCT 70 22P KUZNETSOV, F. K. ; VELEDINSKAYA, A. F. ;
REPT. NO. FTD-MT-24-88-70
PROJ: FTD-6050205
TASK: 01A-T68-05-02

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF SEMINAR AVTOMATIZATSIYA PROGRAMMIROVANIYA. DOKLADY (USSR) N2 P60-82 1967. BY EDWARD KRAY.

DESCRIPTORS: (•COMPILERS, DESIGN), DIGITAL COMPUTERS, ALGORITHMS, PROGRAMMING LANGUAGES, MACHINE TRANSLATION, MAGNETIC TAPE, COMPUTER STORAGE DEVICES, USSR (U)
IDENTIFIERS: TRANSLATIONS, •MINSK 12 COMPUTERS (U)

THE TRANSLATING ROUTINE FROM THE EAN (ESTONIAN ACADEMY OF SCIENCES) ALGORITHMIC LANGUAGE CONSISTS OF A TRANSLATOR PROPER AND AN INTERPRETIVE ROUTINE. THE TRANSLATOR IS MADE UP OF THREE PARTS WHICH ARE RECORDED ON TAPE; FROM THE TAPE THEY ARE AUTOMATICALLY READ INTO THE INTERNAL STORAGE IN THE COURSE OF PROGRAMMING. THE FIRST PART OF THE TRANSLATOR CHECKS THE SYNTAX OF THE INITIAL PROGRAM AND CONVERTS THIS PROGRAM INTO INTERVAL CODES. THE SECOND PART PROGRAMS THE REQUIRED OPERATORS. THE THIRD PART ASSIGNS TRUE ADDRESSES AND COMPILES THE PROGRAM. THE RESULT IS TURNED INTO A MACHINE-LANGUAGE PROGRAM BY THE INTERPRETIVE ROUTINE. BLOCK DIAGRAMS OF THE LOGIC OF ALL THE ABOVE PARTS ARE DESCRIBED. THE LENGTH OF THE PROGRAM TO BE INTERPRETED SHOULD NOT EXCEED 1354 DECIMAL CELLS. GENERAL IDEAS OF THE ABOVE TRANSLATING ROUTINE WERE TAKEN FROM A 'TRANSLATING ROUTINE DEVELOPED BY THE WORKERS OF THE INSTITUTE OF CYBERNETICS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-716 466 9/2
STANFORD UNIV CALIF DEPT OF COMPUTER SCIENCE

MLISP. (U)

OCT 70 101P SMITH,DAVID CANFIELD ;
REPT. NO. CS-179, AIM-135.
CONTRACT: SD-183, PHS-MH-0645-09

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON STANFORD ARTIFICIAL INTELLIGENCE PROJECT. SUPERSEDES REPT. NO. AI MEMO-84 DATED JAN 69, AD-691 791.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), SEMANTICS, SYNTAX, ALGORITHMS, INFORMATION RETRIEVAL, DIGITAL COMPUTERS, ARTIFICIAL INTELLIGENCE (U)
IDENTIFIERS: *MLISP PROGRAMMING LANGUAGE, LISP PROGRAMMING LANGUAGE, *LIST PROCESSING LANGUAGES (U)

MLISP IS A HIGH LEVEL LIST-PROCESSING AND SYMBOL-MANIPULATION LANGUAGE BASED ON THE PROGRAMMING LANGUAGE LISP. MLISP PROGRAMS ARE TRANSLATED INTO LISP PROGRAMS AND THEN EXECUTED OR COMPILED. MLISP EXISTS FOR TWO PURPOSES: (1) TO FACILITATE THE WRITING AND UNDERSTANDING OF LISP PROGRAMS; (2) TO REMEDY CERTAIN IMPORTANT DEFICIENCIES IN THE LIST-PROCESSING ABILITY OF LISP. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-716 738 9/2
NAVAL RESEARCH LAB WASHINGTON D C

A COMPARISON OF SOME FORTRAN LANGUAGES. (U)

DESCRIPTIVE NOTE: FINAL REPT.,
OCT 70 34P BERKOWITZ, ROBERT L. ;
REPT. NO. NRL-MR-2191, NRL COMPUTER BULL-21
PROJ: A37-533/000/6521/WF08-051-702

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, ANALYSIS), DIGITAL COMPUTERS (U)
IDENTIFIERS: *FORTRAN, COMPARISON (U)

THE REPORT COMPARES THE MOST OFTEN USED FEATURES OF THE FORTRAN LANGUAGE IN VARIOUS MACHINES WITH ASA BASIC FORTRAN AND ASA FORTRAN.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-716 798 9/2 6/4
IIT RESEARCH INST CHICAGO ILL

SELF-ORGANIZING NETWORKS. (U)

DESCRIPTIVE NOTE: FINAL SUMMARY REPT. 1961-1970,
FEB 70 14P CAMERON, SCOTT H. ;
REPT. NO. IITRI-E6125
CONTRACT: NONR-3392(00)

UNCLASSIFIED REPORT

DESCRIPTORS: (*LOGIC CIRCUITS, DESIGN),
(*PROGRAMMING(COMPUTERS), REVIEWS),
(*CHARACTER RECOGNITION, AUTOMATION), NETWORKS,
LINEAR PROGRAMMING, ALGORITHMS, DIGITAL COMPUTERS,
APPROXIMATION(MATHEMATICS), PROGRAMMING
LANGUAGES, ARTIFICIAL INTELLIGENCE, LEARNING
MACHINES, ADAPTIVE SYSTEMS, INFORMATION THEORY (U)
IDENTIFIERS: AUTOMATA THEORY, INTEGER PROGRAMMING,
DIALOG DATA SYSTEM, THRESHOLD NETWORKS, DIALOG
PROGRAMMING LANGUAGE, COMPUTER GRAPHICS (U)

PHOTOCHROMIC PERCEPTRON; THE COMPLEXITY OF
THRESHOLD NETWORKS; ADAPTIVE STRATEGIES FOR
LOGICALLY DEEP NETWORKS; FORMAL SYNTHESIS OF
THRESHOLD NETWORKS; SPECIES ADAPTATION; MAXIMUM
SCOPE APPROXIMATIONS; HAND PRINTED CHARACTER
RECOGNITION; THE DIALOG SYSTEM; PROGRAMMING BY
SEQUENTIAL SELECTION AMONG HIGH-LEVEL ALTERNATIVES;
THEORY OF WIRABILITY. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0ML1

AD-717 392 9/2 15/5
APPLIED LOGIC CORP PRINCETON N J

A STUDY IN PROGRAM CONVERSION. (U)

DESCRIPTIVE NOTE: FINAL REPT. NOV 69-AUG 70,
OCT 70 86P KORENJAK, ALLEN J. ;
CONTRACT: N00014-70-C-0168
PROJ: NR-049-288

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), TRANSFORMATIONS), (*INVENTORY CONTROL, DATA PROCESSING SYSTEMS), NAVAL EQUIPMENT, PROGRAMMING LANGUAGES, TIME SHARING, SIMULATION (U)
IDENTIFIERS: BATCH PROCESSING, COBOL (U)

THE REPORT DESCRIBES A STUDY OF THE CONVERSION OF A LARGE INVENTORY CONTROL PROGRAMMING SYSTEM FROM A MACHINE-DEPENDENT LANGUAGE TO MACHINE-INDEPENDENT COBOL. THIS STUDY INCLUDED AN EXPERIMENT DESIGNED TO EVALUATE THE RELATIVE MERITS OF BATCH PROCESSING AND INTERACTIVE TIME-SHARING AS THE MODE OF COMPUTER ACCESS USED TO IMPLEMENT THIS PROGRAM CONVERSION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-717 736 9/2 5/9
FLORIDA STATE UNIV TALLAHASSEE COMPUTER-ASSISTED INSTRUCTION CENTER

FOCAL MANUAL FOR CAI CODING ON THE TSS/8 SYSTEM. (U)

DEC 70 46P KRIBS,H. DEWEY (WRIGHT, BETTY J. (REYNOLDS,EDNA C. (
REPT. NO. CAI-SYSTEMS MEMO-9
CONTRACT: N00014-68-A-0494
PROJ: NR-154-280

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), *PROGRAMMED INSTRUCTION), DIGITAL COMPUTERS, TIME SHARING, INSTRUCTION MANUALS, CODING, PROGRAMMING LANGUAGES (U)
IDENTIFIERS: FOCAL PROGRAMMING LANGUAGE, *COMPUTER AIDED INSTRUCTION, ON LINE COMPUTERS (U)

THE DOCUMENT IS INTENDED TO PROVIDE THE BASIC INFORMATION NEEDED FOR CODING CAI APPLICATIONS IN THE LANGUAGE FOCAL (FORMULATING ON-LINE CALCULATIONS IN ALGEBRAIC LANGUAGE), THIS LANGUAGE IS AVAILABLE ON THE DIGITAL EQUIPMENT CORPORATION TIME-SHARING 8 SYSTEM. WHILE FOCAL IS ORIENTED TOWARD SOLUTION OF ALGEBRAIC PROBLEMS IT IS FLEXIBLE ENOUGH TO BE USED AS A CAI CODING TOOL. THIS DOCUMENT PROVIDES EXPLANATIONS AND EXAMPLES OF THOSE FEATURES IN FOCAL MOST OBVIOUSLY USEFUL FOR CAI CODING. THE DOCUMENT ALSO PROVIDES INFORMATION NEEDED FOR UTILIZING THE TIME-SHARING SYSTEM ON WHICH FOCAL OPERATES. SINCE THIS MANUAL COULD NOT DEMONSTRATE ALL POSSIBLE CODING TECHNIQUES OR ANTICIPATE ALL POSSIBLE APPLICATIONS, THE READER IS ALSO DIRECTED TO MORE COMPREHENSIVE SOURCES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOHL1

AD-717 737 9/2
FLORIDA STATE UNIV TALLAHASSEE COMPUTER-ASSISTED INSTRUCTION CENTER

MANUAL OF APL/1500 FUNCTIONS: SYSTEM FUNCTIONS. (U)

FEB 71 18P MCMURCHIE, THOMAS D. ; THOMAS, DAVID B. ;
REPT. NO. CAI-SYSTEMS MEMO-11
CONTRACT: N00014-68-A-0494
PROJ: NR-154-280

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), INSTRUCTION MANUALS), COMPUTER OPERATORS, PROGRAMMING LANGUAGES, DATA PROCESSING SYSTEMS (U)
IDENTIFIERS: COMPUTER AIDED INSTRUCTION, APL PROGRAMMING LANGUAGE (U)

THE SYSTEMS FUNCTIONS WHICH ARE REPORTED IN THIS DOCUMENT SERVE A POTENTIALLY USEFUL PURPOSE FOR THE SYSTEM OPERATOR OR OTHER QUALIFIED PRIVILEGED USER OF THE APL/1500 SYSTEM. THESE FUNCTIONS PERMIT THE SYSTEM OPERATOR TO TEMPORARILY PRIVILEGE USERS AT ANOTHER TERMINAL, DUMP USER PACK DIRECTORIES, OR OTHERWISE MODIFY APL/1500 SYSTEM OPERATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-718 201 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

AN INTERPRETATION ROUTINE FOR TRANSLATION PROBLEMS (BESM-4). (U)

NOV 70 10P CHIKOIDZE,G. B. I
REPT. NO. FTD-HT-23-527-70
PROJ: FTD-6050205
TASK: DIA-T68-05-02

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF AKADEMIYA NAUK GRUZINSKOI SSR, TIFLIS. SOOBSHCHENIYA, V54 N1 P37-40 1969, BY H. PECK.

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), ALGORITHMS), DIGITAL COMPUTERS, PROGRAMMING LANGUAGES, CODING, DECODING, USSR (U)
IDENTIFIERS: TRANSLATIONS, BESM-4 COMPUTERS (U)

A SYSTEM IS DESCRIBED WHICH ALLOWS PARTIAL AUTOMATION OF PROGRAMMING AN ALGORITHM FOR TRANSLATING. THIS SYSTEM INTERPRETS OPERATORS OF A SPECIAL LANGUAGE. THUS, THE MANUAL PART OF THE PROGRAMMING IS REDUCED TO REWRITING THE ALGORITHM IN THIS SPECIAL LANGUAGE. THE SYSTEM HAS BEEN TESTED ON THE BESM-4 COMPUTER. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0ML1

AD-719 391 9/2
PROBE CONSULTANTS INC PHOENIX ARIZ

INTERMEDIATE LANGAUGE IN THE PILER SYSTEM. (U)

DESCRIPTIVE NOTE: INTERIM PROGRESS REPT.,
FEB 71 18P BARBE,PENNY ;
REPT. NO. PLR-005
CONTRACT: N00014-67-C-0472

UNCLASSIFIED REPORT

DESCRIPTORS: (•PROGRAMMING LANGUAGES, MACHINE TRANSLATIONS), DATA PROCESSING SYSTEMS, COMPUTER STORAGE DEVICES, COMPUTER LOGIC, PROGRAMMING(COMPUTERS), CODING, COMPILERS (U)
IDENTIFIERS: •PILER TRANSLATOR (U)

THE PILER SYSTEM IS AN AUTOMATIC COMPUTER PROGRAM TRANSLATOR WHICH TRANSLATES A SOURCE MACHINE LANGUAGE PROGRAM TO A SPECIFIED LANGUAGE FOR THE TARGET COMPUTER. THE THREE STEPS IN THE TRANSLATION ARE INTERPRETATION OF SUBJECT PROGRAM COMMANDS, ANALYSIS OF SUBJECT PROGRAM FOR FUNCTION AND PURPOSE AND DATA FORMS, AND CONVERSION OF THE SUBJECT PROGRAM TO THE TARGET LANGUAGE. THE REPORT DESCRIBES THE INTERMEDIATE LANGUAGE WHICH IS THE LANGUAGE USED TO TRANSMIT INFORMATION FROM THE ANALYZER TO THE CONVERTER. THIS IS NOT A FORMAL PROGRAMMING LANGUAGE, BUT AN INTERNAL COMMUNICATION CODE. THE INTERMEDIATE LANGUAGE CONSISTS OF THREE ELEMENTS: THE LOGIC FRAMEWORK WHICH DETAILS THE PROGRAM FLOW PATHS, THE IMPERATIVE STATEMENT LIST WHICH DESCRIBES PROCEDURES TO BE PERFORMED, AND THE DATA DESCRIPTION, WHICH DESCRIBES THE FORMAT AND USAGE OF DATA ITEMS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO, /Z0ML1

AD-719 494 9/2
ABERDEEN RESEARCH AND DEVELOPMENT CENTER ABERDEEN PROVING GROUND MD

THE BRLESC II INSTRUCTION CODE. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
FEB 71 56P BECK,GLEEN A. ;
REPT. NO. ARDC-TR-8

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INSTRUCTION MANUALS), COMPUTER STORAGE DEVICES, CONTROL SEQUENCES, COMPUTER LOGIC, SHIFT REGISTERS, INPUT-OUTPUT DEVICES (U)
IDENTIFIERS: BRLESC 2 COMPUTERS, FORTRAN, *ASSEMBLY LANGUAGES (U)

BRLESC II IS A LARGE, HIGH SPEED, ELECTRONIC COMPUTER THAT IS NOW IN OPERATION AT ARDC. IT WAS BUILT TO SUPPLEMENT THE BRLESC I COMPUTER WHICH HAS BEEN OPERATING SINCE 1960. THE REPORT IS INTENDED TO AID PROGRAMMERS IN WRITING ASSEMBLY LANGUAGE PROGRAMS FOR APPLICATIONS WHICH CANNOT BE DONE USING THE FORTRAN LANGUAGE AND, IN SOME CASES, TO AID IN DETERMINING THE CAUSE WHEN FORTRAN PROGRAMS FAIL TO EXECUTE AS EXPECTED BY THE PROGRAMMER. A DESCRIPTION OF EACH OF THE 115 EXECUTABLE INSTRUCTIONS IS GIVEN FROM A PROGRAMMING POINT OF VIEW, THAT IS, A DESCRIPTION IS GIVEN OF WHAT IS DONE, NOT HOW IT IS DONE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0ML1

AD-720 329 9/2
STANFORD UNIV CALIF STANFORD ELECTRONICS LABS

PARALLEL IMPLEMENTATION OF A SINGLE ASSIGNMENT LANGUAGE. (U)

DESCRIPTIVE NOTE: DOCTORAL THESIS,
JAN 71 181P CHAMBERLIN, DONALD DEAN ;
REPT. NO. SU-SEL-71-007, TR-13
CONTRACT: N00014-67-A-0112-0044, NGR-05-020-337

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), DIGITAL COMPUTERS, DATA STORAGE SYSTEMS, MANAGEMENT PLANNING, GRAMMARS, PROGRAMMING(COMPUTERS), MULTIPLE OPERATION, THESES (U)
IDENTIFIERS: *SAMPLE PROGRAMMING LANGUAGE, PARALLEL PROCESSORS, MULTIPROCESSING (U)

THE THESIS DESCRIBES A HIGH-LEVEL COMPUTER PROGRAMMING LANGUAGE, CALLED SAMPLE, AND A PARALLEL PROCESSING SYSTEM TO IMPLEMENT THE LANGUAGE. SAMPLE BELONGS TO THE CLASS OF SINGLE-ASSIGNMENT LANGUAGES, WHICH HAVE THE PROPERTY THAT STATEMENTS ARE NOT NECESSARILY EXECUTED IN THEIR ORDER OF APPEARANCE IN THE PROGRAM; RATHER, EACH STATEMENT IS TRIGGERED BY THE READINESS OF THE DATA ON WHICH IT DEPENDS. BECAUSE OF THIS PROPERTY, SINGLE-ASSIGNMENT LANGUAGES ARE WELL ADAPTED FOR PARALLEL PROCESSING. RULES ARE GIVEN FOR COMPILING SAMPLE PROGRAMS INTO MACHINE-LEVEL INSTRUCTIONS, AND A MACHINE ORGANIZATION IS DESCRIBED TO EXECUTE THE RESULTING CODE. DURING EXECUTION OF A PROGRAM, MANY PROCESSORS ARE ACTIVE SIMULTANEOUSLY, EACH WITH ITS OWN INDEPENDENT INSTRUCTION STREAM. EXPANDABILITY AND GRACEFUL DEGRADATION ARE INTRINSIC PROPERTIES OF THE SYSTEM ORGANIZATION. SOME EXPERIMENTS ARE DESCRIBED WHICH SIMULATE THE BEHAVIOR OF THE PROPOSED SYSTEM AND COMPARE IT WITH A CONVENTIONAL, SINGLE-PROCESSOR SYSTEM. IT IS CONCLUDED THAT THE PROPOSED SYSTEM OFFERS A SPEED ADVANTAGE OVER A CONVENTIONAL SYSTEM, AT THE EXPENSE OF INCREASED PROCESSOR COSTS AND MEMORY REQUIREMENTS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-720 761 9/2
MASSACHUSETTS INST OF TECH CAMBRIDGE PROJECT MAC

AN EXPANSION OF THE DATA STRUCTURING CAPABILITIES OF PAL. (U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,
OCT 70 203P ZILLES, STEPHEN N. ;
REPT. NO. MAC-TM-15
CONTRACT: NONR-4102(01)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: MASTER'S THESIS.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, LINGUISTICS), DATA PROCESSING SYSTEMS, PROGRAMMING(COMPUTERS), SEMANTICS, COMPUTER LOGIC, SYNTAX, THESES (U)
IDENTIFIERS: PAL PROGRAMMING LANGUAGE, DATA STRUCTURES, MAC PROJECT (U)

THE PROGRAMMING LANGUAGE PAL IS EXTENDED TO INCLUDE ADDITIONAL FACILITIES FOR STRUCTURING DATA. THESE EXTENSIONS INCREASE THE FLEXIBILITY OF THE LANGUAGE AND GIVE THE USER GREATER CONTROL OVER THE FORM AND USE OF HIS DATA. THE STRUCTURE DEFINITIONS OF LANDIN ARE INCORPORATED INTO THE PAL SYNTAX.... THE DATA STRUCTURES ARE REPRESENTED BY FUNCTIONS DEFINED ON A SET OF SYMBOLIC COMPONENT SELECTORS. A TYPE SYSTEM BASED ON UNRESTRICTED PREDICATE FUNCTIONS IS INTRODUCED TO PROVIDE STRONG REPRESENTATIONS OF THE DATA STRUCTURES. THE NEW LANGUAGE FEATURES ARE FORMALLY DEFINED BY APPROPRIATE MODIFICATIONS TO THE EXISTING FORMAL DEFINITION OF PAL. THE FLEXIBILITY AND POWER OF THE EXTENSIONS IS ILLUSTRATED IN A SERIES OF EXAMPLES. LIMITATIONS, ALTERNATIVES AND POSSIBLE EXTENSIONS ARE DISCUSSED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO, /Z0ML1

AD-720 798 9/2
INFORMATION AND COMMUNICATION APPLICATIONS INC SILVER SPRING MD

COMPUTER ARCHITECTURE STUDY. (U)

DESCRIPTIVE NOTE1 FINAL REPT. 15 MAR-15 OCT 70,
OCT 70 169P KEELER,FORREST S, IGREBERT,
ALAIN P, INELSON,DAVID A, 1
REPT. NO. ICA-C-69-274-D/12
CONTRACT1 F04701-70-C-0210
PROJ1 AF-3178
MONITOR1 SAMSO TR-70-420

UNCLASSIFIED REPORT

DESCRIPTORS1 (•PROGRAMMING LANGUAGES, DESIGN), (•SPECIAL PURPOSE COMPUTERS, MANAGEMENT PLANNING), AIRBORNE, INPUT-OUTPUT DEVICES, DATA STORAGE SYSTEMS, PROGRAMMING(COMPUTERS), NAVIGATION COMPUTERS, GUIDANCE (U)
IDENTIFIERS1 AIRBORNE COMPUTERS, JOVIAL 6 PROGRAMMING LANGUAGE, SPL/J6 PROGRAMMING LANGUAGE (U)

A PROPOSED AIRBORNE COMPUTER ARCHITECTURE AND ORGANIZATION IS DESCRIBED. THE APPROACH TAKEN WAS TO DEVELOP AN ARCHITECTURE WHICH WOULD DIRECTLY EXECUTE COMPUTER PROGRAMS WRITTEN IN THE SPACE PROGRAMMING LANGUAGE WITHOUT THE USUAL TIME AND COST HANDICAP OF HIGHER-LEVEL LANGUAGE COMPILATION. SPL WAS THOROUGHLY ANALYZED AND EVALUATED AND A SPACE PROGRAMMING LANGUAGE MACHINE (SPLM) ARCHITECTURE WAS DEVELOPED. THE PRIMARY EMPHASIS IS ON THE SPLM DESIGN USING A STACK ORGANIZATIONAL APPROACH RATHER THAN THE TRADITIONAL VON NEUMANN-TYPE COMPUTER ORGANIZATION. SECONDARY EMPHASIS IS PLACED ON SPL ITSELF WITH APPROPRIATE DELETIONS, CHANGES, AND EXTENSIONS OUTLINED. APPARENT AND SUSPECTED COST ADVANTAGES FOR THE SPLM ARCHITECTURE APPROACH AS COMPARED WITH TRADITIONAL COMPUTER TYPES ARE OUTLINED. RECOMMENDATIONS FOR FUTURE AIR FORCE ACTION RELATED TO SPLM DESIGN AND SIMULATION ARE INCLUDED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-721 477 9/2
THAYER SCHOOL OF ENGINEERING HANOVER N H

PDP-9 BASIC INTERPRETER. (U)

OCT 70 144P HODGSON, CHARLES I
CONTRACT: F44620-68-C-0015
PROJ: AF-9749
MONITOR: AFOSR TR-71-0857

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), INSTRUCTION MANUALS), PROGRAMMING LANGUAGES, COMPUTER STORAGE DEVICES, COMPUTER PROGRAMS, CONTROL SEQUENCES, DIGITAL COMPUTERS, THESES (U)
IDENTIFIERS: BASIC PROGRAMMING LANGUAGE, PDP-6 COMPUTER, ASSEMBLY LANGUAGES, INTERPRETERS, FLOATING POINT OPERATION (U)

THE PURPOSE OF THIS REPORT IS TO EXPLAIN HOW AND IN WHAT FORM A LIMITED INSTRUCTION SET OF THE BASIC LANGUAGE WAS PROGRAMMED FOR THE DIGITAL EQUIPMENT CORPORATION PDP-9, AN 8K WORD COMPUTER WITH AN AVERAGE INSTRUCTION EXECUTION TIME OF 1.6 MICRO SECONDS. THE BASIC INSTRUCTIONS PRESENTLY OPERATIONAL ARE LET, PRINT, IF THEN, GO TO, READ, DATA, AND END. PROGRAMS MAY BE SAVED AND LOADED BY PAPER TAPE, AND MAY BE ABOUT 250 STATEMENTS IN LENGTH. PDP-9 BASIC PROGRAMS' REAL TIME RUN TIME ARE ABOUT FOUR TIMES LONGER THAN RUN TIMES IN DARTMOUTH TIME-SHARING.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-723 220 9/2
MOORE SCHOOL OF ELECTRICAL ENGINEERING PHILADELPHIA PA

A COMMAND AND QUERY LANGUAGE ASSEMBLER FOR AN EXTENDED DATA MANAGEMENT SYSTEM. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
APR 71 77P GANA, JORGE ;
REPT. NO. 71-22
CONTRACT: N00014-67-A-0216-0014
PROJ: NR-049-153

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED MAY 71, AD-723 221.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), (*DATA PROCESSING SYSTEMS, MANAGEMENT PLANNING), SYNTAX, INFORMATION RETRIEVAL, CONTROL SEQUENCES, LINGUISTICS, SUBROUTINES, PROGRAMMING(COMPUTERS) (U)
IDENTIFIERS: *COMMAND LANGUAGES(COMPUTERS), COMPUTER STORAGE MANAGEMENT, ASSEMBLER ROUTINES, INTERPRETER ROUTINES, COBOL, *DATA MANAGEMENT (U)

FOR A DATA MANAGEMENT SYSTEM WITH INFORMATION STORAGE AND RETRIEVAL CAPABILITIES A LANGUAGE IS NEEDED BY WHICH A USER OF THE SYSTEM CAN SPECIFY THE RECORDS HE WISHES TO RETRIEVE AND THE OPERATIONS HE WISHES TO PERFORM ON THESE RECORDS. THE COMMAND AND QUERY LANGUAGE UNDER DISCUSSION WAS DEVELOPED TO MEET THESE NEEDS FOR THE EXTENDED DATA MANAGEMENT SYSTEM. ITS DEVELOPMENT WAS DIVIDED INTO TWO SPHERES OF RESPONSIBILITY, THE FIRST SPHERE, REFERRED TO AS THE ASSEMBLER, CENTERS ON THE ROUTINES NEEDED FOR ACCEPTING AND TRANSLATING USER REQUESTS; THE SECOND SPHERE CENTERS ON THOSE ROUTINES NEEDED FOR EXECUTING THE TRANSLATED REQUESTS. THESE ROUTINES ARE CALLED COLLECTIVELY THE INTERPRETER. THE DESIGN OF THE COMMAND AND QUERY LANGUAGE AND THE IMPLEMENTATION OF THE ASSEMBLER IS THE TOPIC OF THIS REPORT. THE DESIGN OF THE LANGUAGE INVOLVES THE FOLLOWING STEPS: DEFINE THE REQUIREMENTS OF THE LANGUAGE, DEFINE THE (EXTERNAL) SYNTAX AND SEMANTICS OF THE LANGUAGE, AND DESIGN AN INTERNAL FORM OF THE LANGUAGE TO ALLOW EFFICIENT PROCESSING BY THE INTERPRETER. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-723 221 9/2
MOORE SCHOOL OF ELECTRICAL ENGINEERING PHILADELPHIA PA

A COMMAND AND QUERY LANGUAGE INTERPRETER FOR AN EXTENDED DATA MANAGEMENT SYSTEM. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAY 71 54P MCDONALD, JAMES NORMAN ;
REPT. NO. 71-23
CONTRACT: N00014-67-A-0216-0014
PROJ: NR-049-153

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED APR 71, AD-723 220.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), (*DATA PROCESSING SYSTEMS, MANAGEMENT PLANNING), PROGRAMMING(COMPUTERS), CONTROL SEQUENCES, THESES (U)
IDENTIFIERS: *COMMAND LANGUAGES(COMPUTERS), COMPUTER STORAGE MANAGEMENT, ASSEMBLER ROUTINES, INTERPRETER ROUTINES, COBOL, *DATA MANAGEMENT (U)

FOR AN EXTENDED DATA MANAGEMENT SYSTEM WITH INFORMATION STORAGE AND RETRIEVAL CAPABILITIES A LANGUAGE IS NEEDED BY WHICH A USER OF THE SYSTEM CAN SPECIFY THE RECORDS HE WISHES TO RETRIEVE AND THE OPERATIONS HE WISHES TO PERFORM ON THESE RECORDS. THE COMMAND AND QUERY LANGUAGE UNDER DISCUSSION WAS DEVELOPED TO MEET THESE NEEDS FOR THE EXTENDED DATA MANAGEMENT SYSTEM. ITS DEVELOPMENT WAS DIVIDED INTO TWO SPHERES OF RESPONSIBILITY, THE FIRST SPHERE, REFERRED TO AS THE ASSEMBLER, CENTERS ON THE ROUTINES NEEDED FOR ACCEPTING AND TRANSLATING USER REQUESTS. THE SECOND SPHERE CENTERS ON THOSE ROUTINES NEEDED FOR EXECUTING THE TRANSLATED REQUESTS. THESE ROUTINES ARE CALLED COLLECTIVELY THE INTERPRETER. THE DESIGN AND IMPLEMENTATION OF THE INTERPRETER IS THE TOPIC OF THIS THESIS. THIS DESIGN AND IMPLEMENTATION INCLUDES ROUTINES TO SET UP AND CHANGE TSOS PROCEDURE FILES ON THE ONE HAND AND ROUTINES TO SERVICE NEW TSOS COMMANDS ON THE OTHER HAND. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML!

AD-723 668 9/2 16/4 17/7
CIRAD CLAREMONT CALIF

ARCHITECTURAL STUDY FOR ADVANCED GUIDANCE COMPUTERS. PART 1. GUIDANCE PROGRAMMING LANGUAGE STUDY. (U)

DESCRIPTIVE NOTE: FINAL REPT. FEB-DEC 70.
FEB 71 133P WERSAN,STEPHEN J. !COLEN, PAUL !CAREY,LEVI !TROUT,ROBERT !
REPT. NO. CIRAD-WS-1007-3-6-PT-1
CONTRACT: F04701-70-C-0065
MONITOR: SAMSO TR-71-6-PT-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO PART 2, AD-723 669.

DESCRIPTORS: (•PROGRAMMING LANGUAGES, DESIGN), (•GUIDED MISSILE COMPUTERS, •NAVIGATION COMPUTERS), SYNTAX, GRAMMARS, PROGRAMMING(COMPUTERS), GUIDED MISSILES(SURFACE-TO-SURFACE) (U)
IDENTIFIERS: SPL/J6 PROGRAMMINGG LANGUAGE, SPL/MK 3 PROGRAMMING LANGUAGE, MINUTEMAN 3 MISSILE, MINUTEMAN, DATA STRUCTURES, SPL/MK 2 PROGRAMMIN LANGUAGE (U)

THE OBJECTIVE OF THE STUDY WAS TO DEFINE AN ADVANCED GUIDANCE COMPUTER ARCHITECTURE THAT WILL PERMIT THE EFFECTIVE USE OF HIGH-ORDER PROGRAMMING LANGUAGES IN THE DEFINITION AND IMPLEMENTATION OF ADVANCED BALLISTIC MISSILE MISSIONS. PART 1 OF THE FINAL REPORT ENTITLED 'GUIDANCE PROGRAMMING LANGUAGE STUDY', PRESENTS THE SPECIFICATION OF A HIGH-ORDER PROGRAMMING LANGUAGE SUITABLE FOR PROGRAMMING ADVANCED GUIDANCE AND TARGETING MISSIONS FOR THE ADVANCED GUIDANCE COMPUTER ARCHITECTURES. A SUBSET OF THE SPACE PROGRAMMING LANGUAGE (SPL/JG) WAS SELECTED AND IMPROVED, AND ITS SYNTACTIC FORMS ANALYZED FOR EFFICIENT CODE GENERATION FOR THE ARCHITECTURES UNDER CONSIDERATION. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-723 669 9/2 16/4 17/7
CIRAD CLAREMONT CALIF

ARCHITECTURAL STUDY FOR ADVANCED GUIDANCE COMPUTERS. PART 2. GUIDANCE COMPUTER ARCHITECTURE STUDY. (U)

DESCRIPTIVE NOTE: FINAL REPT. FEB-DEC 70,
FEB 71 314P WERSAN, STEPHEN J. ;COLEN, PAUL ;CAREY, LEVI ;TROUT, ROBERT ;
REPT. NO. CIRAD-WS-1007-3-6-PT-2
CONTRACT: F04701-70-C-0065
MONITOR: SAMSO TR-71-6-PT-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO PART 1, AD-723 668.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), (*GUIDED MISSILE COMPUTERS, NAVIGATION COMPUTERS), DATA STORAGE SYSTEMS, CONTROL SEQUENCES, PROGRAMMING(COMPUTERS), CONTROL SYSTEMS, DATA PROCESSING SYSTEMS, COMPUTER LOGIC, GUIDED MISSILES(SURFACE-TO-SURFACE) (U)
IDENTIFIERS: COMPUTER STORAGE MANAGEMENT, SPL/MK 3 PROGRAMMING LANGUAGE, MNEMONICS, INPUT OUTPUT ROUTINES, MINUTEMAN, MINUTEMAN 3 MISSILE (U)

THE OBJECTIVE OF THE STUDY WAS TO DEFINE AN ADVANCED GUIDANCE COMPUTER ARCHITECTURE THAT WILL PERMIT THE EFFECTIVE USE OF HIGH-ORDER PROGRAMMING LANGUAGES IN THE DEFINITION AND IMPLEMENTATION OF ADVANCED BALLISTIC MISSILE MISSIONS. PART 2 OF THE FINAL REPORT ENTITLED 'GUIDANCE COMPUTER ARCHITECTURE STUDY', CONTAINS THE SELECTED ARCHITECTURE TOGETHER WITH THE SPL LANGUAGE AND COMPILER CONSIDERATIONS INVOLVED IN THE DESIGN, AND THE PROGRAMMING TRADEOFF STUDIES. THE STUDY PLACED EMPHASIS ON THE ABILITY OF THE ARCHITECTURE TO EFFICIENTLY EXECUTE COMPILER GENERATED CODE. A SELECTED SET OF GUIDANCE AND TARGETING EQUATIONS WAS USED AS A VEHICLE FOR CONDUCTING TRADEOFF STUDIES. SPL COMPILER GENERATED CODE FORMS WERE STUDIED FOR INTERFACING WITH COMPUTER FUNCTIONS. THE SIZE EFFICIENCY OF THE OBJECT CODE COMPARED TO THAT OF ASSEMBLY PROGRAMMING FOR TRADITIONAL SINGLE ADDRESS FIXED POINT AIRBORNE COMPUTER ARCHITECTURES WAS THE MAJOR DESIGN CONSIDERATION. THE RESULTING ARCHITECTURE IS EFFECTIVE IN SATISFYING OTHER FUNCTIONAL GUIDANCE COMPUTER SYSTEM REQUIREMENTS (I.E. EXECUTION TIME AND MEMORY SIZE) WHILE SIGNIFICANTLY IMPROVING THE SIZE EFFICIENCY (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-725 284 9/2
NEW YORK UNIV BRONX DEPT OF ELECTRICAL ENGINEERING

SURVEY OF DATA STRUCTURES FOR COMPUTER GRAPHICS SYSTEMS, (U)

71 22P WILLIAMS,ROBIN ;
CONTRACT: AF-AFOSR-1854-70
PROJ: AF-9769
MONITOR: AFOSR TR-71-1799

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN COMPUTING SURVEYS, V3 N1 P1-21 MAR 71.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, GRAPHICS), (*DATA STORAGE SYSTEMS, MANAGEMENT PLANNING), PROGRAMMING LANGUAGES, SYSTEMS ENGINEERING, REVIEWS (U)
IDENTIFIERS: *COMPUTER GRAPHICS, *DATA STRUCTURES, INTERACTIVE COMPUTER GRAPHICS, COMPUTER STORAGE MANAGEMENT (U)

THE REPORT IS A SURVEY OF DATA STRUCTURES AND THEIR USE IN COMPUTER GRAPHICS SYSTEMS. THE REASONS FOR USING DATA STRUCTURES ARE GIVEN. THE SEQUENTIAL, RANDOM, AND LIST ORGANIZATIONS ARE DISCUSSED, AND IT IS SHOWN HOW THEY MAY BE USED TO BUILD COMPLEX DATA STRUCTURES. REPRESENTATIVE SAMPLES OF LANGUAGES SPECIFICALLY DESIGNED FOR CREATING AND MANIPULATING DATA STRUCTURES ARE DESCRIBED. SOME TYPICAL COMPUTER GRAPHICS SYSTEMS AND THEIR DATA STRUCTURES ARE DESCRIBED. IT IS ALSO POINTED OUT THAT MUCH WORK REMAINS TO BE DONE TO DEVELOP A SATISFACTORY THEORETICAL FOUNDATION FOR DESIGNING DATA STRUCTURES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-725 468 9/2
NAVAL WEAPONS LAB DAHLGREN VA

FLAP PROGRAMMER'S MANUAL. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
APR 71 83P MORRIS, ALFRED H. , JR;
REPT. NO. NWL-TR-2558
PROJ: ZFXX-512-001

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INSTRUCTION MANUALS), PROGRAMMING(COMPUTERS), DATA PROCESSING SYSTEMS, PARTIAL DIFFERENTIAL EQUATIONS, POLYNOMIALS, MATRIX ALGEBRA, NUMERICAL ANALYSIS (U)
IDENTIFIERS: FLAP PROGRAMMING LANGUAGE (U)

FLAP IS A PROGRAMMING LANGUAGE THAT ALLOWS THE ANALYST TO MANIPULATE SYMBOLIC MATHEMATICAL DATA IN A VARIETY OF WAYS. FOR EXAMPLE, FLAP CAN BE USED TO ADD AND MULTIPLY TRIOGONOMETRIC POLYNOMIALS, TRANSFORM PARTIAL DIFFERENTIAL EQUATIONS, AND MANIPULATE MATRICES. THE POLYNOMIALS, DIFFERENTIAL EQUATIONS, AND MATRICES ARE REPRESENTED AND MANIPULATED SYMBOLICALLY. THE FLAP SYSTEM IS CURRENTLY AVAILABLE TO NWL PERSONNEL BY WAY OF AN IBM 2780 TERMINAL. THE OPERATIONS OF THE LANGUAGE ARE DESCRIBED AND ILLUSTRATED IN THIS MANUAL. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-725 988 9/2
MOORE SCHOOL OF ELECTRICAL ENGINEERING PHILADELPHIA PA

SPRINT - A PROGRAMMING LANGUAGE WITH GENERAL STRUCTURE. (U)

DESCRIPTIVE NOTE: INTERIM TECHNICAL REPT.,
AUG 70 334P KAPPS,CHARLES A. ;
REPT. NO. 71-18
CONTRACT: DA-31-124-ARO(D)-98, NSF-GJ-27
PROJ: DA-2-0-061102-B-14-C, DA-2-0-011501-B-704
MONITOR: AROD 4166:23-M

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: DOCTORAL THESIS.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, LINGUISTICS), PROGRAMMING(COMPUTERS), PROBLEM SOLVING, COMPUTER LOGIC, COMPILERS, COMPUTER STORAGE DEVICES, DATA PROCESSING SYSTEMS, CONTROL SEQUENCES, SHIFT REGISTERS, SUBROUTINES, INSTRUCTION MANUALS, THESES (U)
IDENTIFIERS: *SPRINT PROGRAMMING LANGUAGE, PARALLEL PROCESSORS, DATA STRUCTURES, ASSOCIATIVE STORAGE, TURING MACHINES (U)

THE DOCUMENT DESCRIBES A COMPUTER PROGRAMMING LANGUAGE, SPRINT, WHICH WAS DESIGNED TO IMPLEMENT A GENERAL CONCEPT OF DATA STRUCTURE, AND A GENERAL SCHEME FOR PROGRAM STRUCTURE. IT IS SHOWN BY SEVERAL EXAMPLES THAT THIS GENERAL STRUCTURE HAS CONSIDERABLE PRACTICAL UTILITY, ESPECIALLY IN THE FIELD OF LINGUISTIC PROCESSING. THE GENERAL CONCEPT OF DATA STRUCTURE WAS MECHANIZED BY MEANS OF AN ASSOCIATIVE MEMORY. THIS ASSOCIATIVE MEMORY CONTAINS WORDS MADE UP OF VARIABLE LENGTH ALPHA-NUMERIC STRINGS. WORDS ARE JOINED TOGETHER TO FORM LISTS, AND LISTS ARE IDENTIFIED BY A NAME WHICH HAS THE SAME FORMAT AS A WORD. THE PROGRAMMER CAN CREATE A LANGUAGE OF NAMES WHICH ARE SEMANTICALLY MEANINGFUL TO HIM, AND THUS IMPOSE A STRUCTURE ON THE LISTS. ADDITIONALLY HE MAY USE THE LISTS THEMSELVES TO ENUMERATE LOGICAL RELATIONS OVER HIS DATA. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-726 049 9/2 5/7
MASSACHUSETTS INST OF TECH CAMBRIDGE PROJECT MAC

A MODEL FOR PROCESS REPRESENTATION AND SYNTHESIS. (U)

DESCRIPTIVE NOTE: DOCTORAL THESIS,
JUN 71 269P THOMAS, ROBERT H. ;
REPT. NO. MAC-TR-87
CONTRACT: NONR-4102(01), NGR-22-009-393

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), (*COMPUTATIONAL LINGUISTICS, PROGRAMMING LANGUAGES), SEMANTICS, SYNTAX, CONTROL SEQUENCES, COMPUTER STORAGE DEVICES, DATA PROCESSING SYSTEMS, COMPUTER LOGIC, INTERFACES, CODING, QUEUEING THEORY, GRAPHICS, THESES (U)
IDENTIFIERS: MAC PROJECT, PROCESS REPRESENTATION, PROCESS SYNTHESIS, PARALLEL PROCESSORS, COMPUTER GRAPHICS (U)

THE DISSERTATION INVESTIGATES THE PROBLEM OF REPRESENTING GROUPS OF LOOSELY CONNECTED PROCESSES AND DEVELOPS A MODEL FOR PROCESS REPRESENTATION USEFUL FOR SYNTHESIZING COMPLEX PATTERNS OF PROCESS BEHAVIOR. THERE ARE THREE PARTS TO THE DISSERTATION. THE FIRST PART ISOLATES THE CONCEPTS WHICH FORM THE BASIS FOR THE PROCESS REPRESENTATION MODEL BY FOCUSING ON QUESTIONS SUCH AS: WHAT IS A PROCESS; WHAT IS AN EVENT; SHOULD ONE PROCESS BE ABLE TO RESTRICT THE CAPABILITIES OF ANOTHER. THE SECOND PART DEVELOPS A MODEL FOR PROCESS REPRESENTATION WHICH CAPTURES THE CONCEPTS AND INTUITIONS DEVELOPED IN THE FIRST PART. THE MODEL PRESENTED IS ABLE TO DESCRIBE BOTH THE INTERNAL STRUCTURE OF INDIVIDUAL PROCESSES AND THE INTERFACE STRUCTURE BETWEEN INTERACTING PROCESSES. MUCH OF THE MODEL'S DESCRIPTIVE POWER DERIVES FROM ITS USE OF THE NOTION OF PROCESS STATE AS A VEHICLE FOR RELATING THE INTERNAL AND EXTERNAL ASPECTS OF PROCESS BEHAVIOR. THE THIRD PART DEMONSTRATES BY EXAMPLE THAT THE MODEL FOR PROCESS REPRESENTATION IS A USEFUL ONE FOR SYNTHESIZING PROCESS BEHAVIOR PATTERNS. IN IT THE MODEL IS USED TO DEFINE A VARIETY OF INTERESTING PROCESS BEHAVIOR PATTERNS. THE DISSERTATION CLOSES BY SUGGESTING HOW THE MODEL COULD BE USED AS A SEMANTIC BASE FOR A VERY POTENT LANGUAGE EXTENSION FACILITY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOMLI

AD-726 610 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

ALGORITHMIC LANGUAGE PROYEKT. (U)

FEB 71 32P OLEINIK, R. I. ; PERTSOV, E. E. ; RAW, O. I. ;

REPT. NO. FTD-MT-24-277-70
PROJ: FTD-6050205
TASK: DIA-T68-05-02

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF MONO. PRIMENENIE VYCHISLITELNYKH MASHIN DLYA PROEKTIROVANIYA TSIFROVYKH USTROISTV. SBORNIK STATEI (COMPUTER APPLICATION IN DESIGNING DIGITAL COMPUTERS. COLLECTION OF ARTICLES), MOSCOW, 1968 P132-152. BY W. W. KENNEDY.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, ALGORITHMS), COMPUTERS, ELECTRONIC EQUIPMENT, DESIGN, COMPUTER LOGIC, DATA PROCESSING SYSTEMS, USSR (U)
IDENTIFIERS: TRANSLATIONS, PROYEKT PROGRAMMING LANGUAGE, ALGOL 60 PROGRAMMING LANGUAGE, ALGOL (U)

THE BASIC OUTLINES OF THE PROBLEM-ORIENTED ALGORITHMIC LANGUAGE PROYEKT ARE GIVEN. THE LANGUAGE IS INTENDED FOR REALIZING ALGORITHMIC METHODS OF DESIGNING RADIOELECTRONIC EQUIPMENT ON GENERAL-PURPOSE COMPUTERS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-726 707 9/2
MOORE SCHOOL OF ELECTRICAL ENGINEERING PHILADELPHIA PA

A MANUAL WITH EXAMPLES FOR THE DATA DESCRIPTION LANGUAGE (DDL). (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
APR 71 266P SMITH,DIANE P. ;
REPT. NO. 71-20
CONTRACT: N00014-67-A-0216-0014
PROJ: NR-049-153, NR-049-272

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, SPECIFICATIONS), COMPUTER STORAGE DEVICES, INFORMATION RETRIEVAL, MANAGEMENT PLANNING, DATA PROCESSING SYSTEMS (U)
IDENTIFIERS: DDL PROGRAMMING LANGUAGE, MANAGEMENT INFORMATION SYSTEMS, DATA STRUCTURES (U)

A DATA DESCRIPTION LANGUAGE (DDL) FOR DESCRIBING THE ORGANIZATIONS OF DATA IN FILES AND DATA BASES, IS SPECIFIED. THIS LANGUAGE HAS BEEN DEVELOPED AS PART OF A UTILITY WHICH WILL PROCESS DATA BASES OR DATA FILES, WITH EXISTING FORMATS AND ORGANIZATIONS, AND WHICH WILL PRODUCE THESE DATA IN NEW DESIRED FORMS. THE DDL IS SUFFICIENTLY RICH AND EXPRESSIVE TO BE READILY USED TO DESCRIBE THE ORGANIZATION OF EXISTING DATA BASES, THE STRUCTURE OF DESIRED DATA BASES AND THE TRANSFORMATIONS BETWEEN THE EXISTING ONES TO THE DESIRED ONES. THE DDL IS SPECIFIED IN THE FORM OF AN EXTENSIVE MANUAL CONTAINING SPECIFICATIONS AND A SET OF DETAILED EXAMPLES OF THE USE OF THE DDL. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0ML1

AD-726 875 9/2 5/1 15/5
CASE WESTERN RESERVE UNIV CLEVELAND OHIO DEPT OF OPERATIONS RESEARCH

ADVANCED MATERIEL SYSTEMS PLANNING PROGRAM TRANSLATION AND SIMULATION. (U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,
JAN 69 19P DEAN,BURTON V. ;LEESON, ANDREW J. ;
REPT. NO. TM-132
CONTRACT: DAHC19-68-C-0007, DA-ARO(D)-31-124-G1034
PROJ: DA-54231202104, DA-54231205586

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-697 971.

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), DATA PROCESSING SYSTEMS), (*ARMY BUDGETS, MATHEMATICAL MODELS), PROGRAMMING LANGUAGES, INPUT-OUTPUT DEVICES, ERRORS, SIMULATION (U)
IDENTIFIERS: ALGOL, FORTRAN, COMPUTERIZED SIMULATION, RESOURCE ALLOCATION, THEMIS PROJECT (U)

PREVIOUS STUDIES HAVE INDICATED THE NEED TO DEVELOP COMPUTER PROGRAMS FOR USE IN SIMULATING R AND D SYSTEMS PLANNING PROBLEMS. THIS STUDY IS CONCERNED WITH DEVELOPING A UNIVAC 1108 PROGRAM WHICH SIMULATES ALTERNATIVE BUDGETING AND PROJECT SELECTION DECISIONS IN PLANNING ARMY MATERIEL COMMAND R AND D PROGRAMS. SIMULATIONS ARE CONDUCTED TO TEST THE EFFECTS OF ERRORS IN ESTIMATING PARAMETER VALUES ON SOLUTIONS. RISKS, COSTS, AND VALUES ARE REQUIRED INPUT DATA FOR THE COMPUTER PROGRAMS. CASE WESTERN RESERVE UNIVERSITY'S UNIVAC 1108 WAS USED IN THIS STUDY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-727 045 9/2 16/2 15/3.1
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB

DEANE: A COMPUTER AID FOR BALLISTIC MISSILE DEFENSE ANALYSIS. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,
NOV 70 76P MCCRAITH,DOUGLAS L. ;
REPT. NO. TN-1970-6
CONTRACT: F19628-70-C-0230
PROJ: DA-7-X-263304-D-215
MONITOR: ESD TR-70-339

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, SPECIAL PURPOSE COMPUTERS), (*GUIDED MISSILE TRAJECTORIES, EQUATIONS OF MOTION), (*ANTIMISSILE DEFENSE SYSTEMS, THREAT EVALUATION), INTERCEPTION PROBABILITIES, SENSORS, RADAR TRACKING, CONTROL SEQUENCES, DATA PROCESSING SYSTEMS, NUMERICAL ANALYSIS, TIME SHARING (U)
IDENTIFIERS: DEANE PROGRAMMING LANGUAGE (U)

DEANE IS A SPECIAL-PURPOSE COMPUTER LANGUAGE DESIGNED FOR USE IN A TIME-SHARED ENVIRONMENT BY A BALLISTIC MISSILE DEFENSE SYSTEMS ANALYST. IN ESSENCE, IT IS A SOPHISTICATED CALCULATOR WHOSE MODULAR DESIGN ALLOWS THE USER TO REQUEST BASIC COMPUTATIONS IN A CONVENIENT FASHION. THE INTERPRETATION OF THE COMPUTATIONAL RESULTS IS NOT MADE BY DEANE UNDER THE PRETENSE OF BEING A SIMULATOR, BUT IS LEFT TO THE USER. THIS REPORT IS A USER'S MANUAL DESCRIBING THE COMPUTATIONS AVAILABLE AND GIVING EXAMPLES OF HOW THEY MAY BE ORDERED TO SOLVE TYPICAL PROBLEMS. ALSO PRESENTED IS A DESCRIPTION OF THE LOGICAL AND/OR MATHEMATICAL FOUNDATIONS OF THE COMPUTATIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0ML1

AD-727 115 9/2
STANFORD UNIV CALIF DEPT OF COMPUTER SCIENCE

PL360(REVISED). A PROGRAMMING LANGUAGE FOR THE IBM360. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAY 71 99P MALCOLM,MICHAEL A. ;
REPT. NO. STAN-CS-71-215
CONTRACT: N00014-67-A-0112-0029, AT(04-3)-326
PROJ: NR-044-211

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SPONSORED IN PART BY GRANT NSF-GJ-408. SUPERSEDES REPORT DATED 1 APR 68. PB-178 114.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), COMPILERS, SYNTAX, DIGITAL COMPUTERS, SYMBOLS, PROGRAMMING(COMPUTERS), INSTRUCTION MANUALS (U)
IDENTIFIERS: PL360 PROGRAMMING LANGUAGE, IBM 360 COMPUTERS (U)

IN 1968, N. WIRTH (JAN, JACM) PUBLISHED A FORMAL DESCRIPTION OF PL360, A PROGRAMMING LANGUAGE DESIGNED SPECIFICALLY FOR THE IBM 360. PL360 HAS AN APPEARANCE SIMILAR TO THAT OF ALGOL, BUT IT PROVIDES THE FACILITIES OF A SYMBOLIC MACHINE LANGUAGE. SINCE 1968, NUMEROUS EXTENSIONS AND MODIFICATIONS HAVE BEEN MADE TO THE PL360 COMPILER WHICH WAS ORIGINALLY DESIGNED AND IMPLEMENTED BY N. WIRTH AND J. WELLS. INTERFACE AND INPUT-OUTPUT SUBROUTINES HAVE BEEN WRITTEN WHICH ALLOW THE USE OF PL360 UNDER OS, DOS, MTS AND ORVYL. A FORMAL DESCRIPTION OF PL360 AS IT IS PRESENTLY IMPLEMENTED IS GIVEN. THE DESCRIPTION OF THE LANGUAGE IS FOLLOWED BY SECTIONS ON THE USE OF PL360 UNDER VARIOUS OPERATING SYSTEMS, NAMELY OS, DOS AND MTS. INSTRUCTIONS ON HOW TO USE THE PL360 COMPILER AND PL360 PROGRAMS IN AN INTERACTIVE MODE UNDER THE ORVYL TIME-SHARING MONITOR ARE ALSO INCLUDED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-727 190 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

MINIATURE COMPUTERS, (U)

MAY 71 156P MAYOROV,S. A. INOVIKOV,G. I. ;

REPT. NO. FTD-HC-23-642-70
PROJ: FTD-6050205
TASK: DIA-T68-05-02

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF MONO. MALOGABARITNYE VYCHISLITELNYE MASHINY (SMALL COMPUTERS) MOSCOW, 1967 P20-41, 71-77, 80-95, 108-139, 142-208, 232-234.

DESCRIPTORS: (*DIGITAL COMPUTERS, DESIGN), CONTROL SYSTEMS, COMPUTER LOGIC, ALGORITHMS, LOGIC CIRCUITS, MICROMINIATURIZATION(ELECTRONICS), PROGRAMMING LANGUAGES, USSR (U)
IDENTIFIERS: TRANSLATIONS, COMPUTER AIDED DESIGN, SOL PROGRAMMING LANGUAGE (U)

THE DESIGN OF DIGITAL CONTROL SYSTEMS, STARTING WITH DETERMINATION OF CONTROL STRATEGY UP TO TESTING THE SYSTEM PROTOTYPE HAS BEEN ASSOCIATED WITH FINDING AN OPTIMAL SOLUTION AT EACH STAGE OF THE DESIGN WHICH WILL SATISFY CONSTRAINTS FOR ACCURACY, OPERATING SPEED, STRUCTURAL SIMPLICITY AND RELIABILITY, THE TENDENCY TO EXCLUDE THE POSSIBILITY OF INTRODUCING ERRORS AND TO INCREASE THE DESIGNER'S WORKING EFFICIENCY IN THE PROCESS OF DESIGNING LEADS TO THE NECESSITY OF EXTENSIVE USE OF GENERAL-PURPOSE DIGITAL COMPUTERS (GPDC) FOR SOLVING PROBLEMS OF QUALITATIVE DETERMINATION OF THE REQUIRED CONTROL SYSTEM PARAMETERS, ANALYSIS OF FUNCTIONS AND THE DIAGRAMS OF THE PROPOSED SYSTEM CONFIGURATIONS, AND COMPILING TECHNICAL AND TECHNOLOGICAL DOCUMENTATION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-727 246 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

A LANGUAGE FOR THE FORMAL DESCRIPTION OF A SYSTEM OF INSTRUCTIONS FOR COMPUTERS. (U)

MAR 71 19P GRIGAS, G. K. 1
REPT. NO. FTD-HT-23-188-71

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF AKADEMIYA NAUK LITOVSKOI SSR. VILNA. TRUDY, SERIYA B, V50 N3 P127-136 1967, BY B. TAUBER.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), DIGITAL COMPUTERS, ALGORITHMS, SYNTAX, INPUT-OUTPUT DEVICES, USSR (U)
IDENTIFIERS: TRANSLATIONS, ALGOL, ALCOM PROGRAMMING LANGUAGE (U)

THE PROPERTIES OF THE FORMAL DESCRIPTION OF DIGITAL COMPUTERS ARE INVESTIGATED. AN ALGORITHMICAL LANGUAGE FOR DESCRIBING AN INSTRUCTION SET OF DIGITAL COMPUTERS IS PRESENTED. THE CONCEPTS AND SYMBOLS OF THE WIDELY KNOWN ALGOL ARE USED IN THE LANGUAGE. THE LINEAR VARIANT OF THE LANGUAGE IS DESCRIBED. RULES FOR CONVERTING THE LINEAR DESCRIPTION OF ALGORITHM TO GRAPHIC ONE ARE GIVEN. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-727 249 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

THE BASIC LANGUAGE OF THE LEVEL OF A MNEMONIC CODE. (U)

MAR 71 48P LETICHEVSKII, A. A. ; GRISHCHENKO, N. M. ; FEDYURKO, V. V. ;
REPT. NO. FTD-MT-24-323-70
PROJ: FTD-6050205
TASK: DIA-T68-05-02

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF MATEMATICHESKOE OBESPECHENIE ETSVM I EFFEKTIVNAYA ORGANIZATSIYA VYCHISLITELNOGO PROTSESSA. SEMINAR. TRUDY (USSR) N1 P110-137 1967. BY CHARLES T. OSTERTAG.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), DIGITAL COMPUTERS, PNEUMONICS SYNTAX, COMPILERS, MACHINE TRANSLATION, USSR (U)
IDENTIFIERS: TRANSLATIONS, M-20 COMPUTERS, MNEMONICS (U)

THE DESCRIBED BASIC LANGUAGE OF THE LEVEL OF A PNEUMONICS CODE ORIENTED TOWARD THE M-20 COMPUTER, IS INTENDED FOR USE AS A LOW-LEVEL LANGUAGE OF AUTOMATED PROGRAMMING IN DESIGNING COMPUTERS. THE LANGUAGE AND ITS CORRESPONDING TRANSLATOR ARE TO BE USED FOR CONSTRUCTING ADDITIONS TO THE LANGUAGE AND THE TRANSLATOR, FOR TRANSLATING ANY LANGUAGE ADDITION, AND AS INDEPENDENT MEANS FOR AUTOMATING THE PROGRAMMING OF ALGORITHMS FOR WHICH EXISTING AUTOMATING SYSTEMS CANNOT BE USED. FOUR OPERATOR TYPES OF THE BASIC LANGUAGE ARE LISTED WITH RESPECT TO THE SYSTEM OF COMMANDS OF THE M-20 COMPUTER. THE BASIC SYMBOLS, CONSTANTS, VARIABLES, PROGRAMS, DESCRIPTORS, AND OPERATORS ARE DEFINED. A META-LANGUAGE IS USED TO DESCRIBE THE BASIC LANGUAGE WHERE SUITABLE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-727 266 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

HARDWARE FOR USE WITH ALGOL-60 AUTOMATIC PROGRAMMING. (U)

MAR 71 9P STANILOVSKII,A. I. ;
ZHITENEVA,T. P. ;POTAPOVA,M. G. ;
REPT. NO. FTD-HT-23-241-71

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF VOPROSY TEKHNICHESKOI EKSPLUATATSII VYCHISLITELNYKH MASHIN (USSR) N2 P50-53 1969. BY B. TAUBER.

DESCRIPTORS: (*INPUT-OUTPUT DEVICES, DESIGN), (*PROGRAMMING(COMPUTERS), AUTOMATION), PROGRAMMING LANGUAGES, SHIFT REGISTERS, PUNCHED CARDS, CODING, DECODING, RELIABILITY(ELECTRONICS), USSR (U)
IDENTIFIERS: TRANSLATIONS, ALGOL, ALGOL 60 PROGRAMMING LANGUAGE (U)

THE ARTICLE CONTAINS A DESCRIPTION OF ALPHANUMERIC INPUT AND OUTPUT DEVICES AIMED AT IMPROVED RELIABILITY AND OPERATING SPEED IN CONNECTION WITH BROAD USE OF ALGOL-60 FOR AUTOMATIC PROGRAMMING. A PROJECT WAS UNDERTAKEN TO MODIFY THE ALPHANUMERIC OUTPUT AND INPUT DEVICES TO OVERCOME SUCH DEFICIENCIES AS BURNING OF CONTACTS, LOSS OF REGULATION, LIMITED SWITCHING SPEED, ETC. THE PAGE PRINTING APPARATUS RTA-50-2M WAS USED AS THE CODING AND DECODING ELEMENT. DETAILS ARE GIVEN REGARDING PROCESSING TIME AND MEANS OF DECREASING IT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-727 930 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

A CONVERSION SYSTEM FOR INPUT INTO A COMPUTER OF QUESTIONS IN SIMPLIFIED RUSSIAN. (U)

JUN 71 25P AFANSEV, V. N. ;KOLINKO, A. I. ;YAKIMENKO, S. N. ;
REPT. NO. FTD-HC-23-261-71

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF SEMINAR INFORMATSIONNO-UPRAVLYAYUSHCHIE SISTEMY. DOKLADY (USSR) N2 P81-101 1967.

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), DIGITAL COMPUTERS), PROGRAMMING LANGUAGES, ALGORITHMS, USSR, INFORMATION RETRIEVAL (U)
IDENTIFIERS: TRANSLATIONS, MACHINE ORIENTED LANGUAGES, MINSK-2 COMPUTERS (U)

KEY QUESTIONS IN THE PROBLEM OF COMMUNICATION AT THE MAN-MACHINE INTERFACE OF COMPUTING AND INFORMATION SYSTEMS ARE THE CLOSENESS OF THE FORMALIZED LANGUAGE TO THE NATURAL LANGUAGE AND THE POSSIBILITY OF MANIPULATING THE SYSTEM IN THE NATURAL LANGUAGE. THE WRITERS UNDERTOOK TO DESIGN A MANIPULATION SYSTEM FOR THE SIMPLEST POSSIBLE FORMULATION OF INQUIRIES FOR THE INFORMATION SYSTEM TO PROVIDE IT WITH CERTAIN ALGORITHMIC AND INFORMATIONAL FEATURES, FOR PERMITTING INPUT IN A NATURAL FORM TO BE USED BY PERSONS UNFAMILIAR WITH ITS STRUCTURE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-728 223 5/9
MICHIGAN UNIV ANN ARBOR DEPT OF PSYCHOLOGY

RESEARCH TOWARD ADVANCING AIR FORCE TRAINING TECHNIQUES THROUGH COMPUTER ASSISTED INSTRUCTION. (U)

DESCRIPTIVE NOTE: FINAL REPT.,
AUG 71 6P ERICKSEN,STANFORD C.;
STARKS,DAVID D.;
CONTRACT: AF-AFOSR-1601-68
PROJ: AF-9778
MONITOR: AFOSR TR-71-2192

UNCLASSIFIED REPORT

DESCRIPTORS: (*AIR FORCE TRAINING, *PROGRAMMED INSTRUCTION), COMPUTERS, PROGRAMMING LANGUAGES, PREPARATION, LEARNING, STUDENTS (U)
IDENTIFIERS: *COMPUTER AIDED INSTRUCTION (U)

THE PROJECT WAS DESIGNED TO ADAPT SELECTED SEGMENTS OF UNDERGRADUATE COURSES FOR COMPUTER BASED SELF-INSTRUCTIONAL PRESENTATION. THIS ADAPTATION INCLUDED THE FOLLOWING SUBOBJECTIVES: PREPARATION OF SELF-INSTRUCTIONAL MATERIALS FOR USE IN A VARIETY OF UNDERGRADUATE COURSES;. IMPLEMENTATION OF THE COMPUTER AS AN INSTRUCTIONAL TOOL IN A VARIETY OF UNDERGRADUATE COURSES; MODIFICATION OF COMPUTER LANGUAGES FOR INSTRUCTIONAL APPLICATIONS; EVALUATION OF SELECTED INSTRUCTIONAL UNITS AGAINST THE CRITERIA OF LEVEL OF STUDENT LEARNING. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0ML1

AD-728 224 9/2
COMPUTER RESEARCH CORP NEWTON MASS

INTERACTIVE PROGRAMMING SYSTEMS AND LANGUAGES. (U)

DESCRIPTIVE NOTE: FINAL REPT.,
JUL 71 114P CLAPP,LEWIS :
CONTRACT: F44620-67-C-0015
PROJ: AF-9769
MONITOR: AFOSR TR-71-2159

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, *TIME SHARING), (*PROGRAMMING LANGUAGES, TIME SHARING), PROGRAMMING(COMPUTERS), ANALOG-DIGITAL COMPUTERS, INPUT-OUTPUT DEVICES, INTERFACES, COMPUTER LOGIC, COMPILERS, ARTIFICIAL INTELLIGENCE, NUMERICAL ANALYSIS, STATE-OF-THE-ART REVIEWS (U)
IDENTIFIERS: CENTRAL PROCESSING UNITS, MULTIPROGRAMMING, COMPUTER GRAPHICS, COMPUTER AIDED DESIGN, DATA PROCESSING TERMINALS, ON LINE COMPUTERS (U)

IN AN ATTEMPT TO SHED SOME LIGHT ON THIS DYNAMIC NEW FIELD OF TIME SHARING APPLICATIONS, THE AUTHOR HAS PREPARED THIS SURVEY ON THE STATE OF THE ART IN ON-LINE SYSTEMS. IT IS OUR PURPOSE TO HELP THE READER BECOME AWARE OF THE IMPORTANT POTENTIAL OF ON-LINE SYSTEMS, ESPECIALLY AS IT AFFECTS HIS OWN AREAS OF SPECIALIZATION AND ENDEAVOR. IN A SMALL WAY, ONE HOPES TO ENCOURAGE PROGRESS IN ADVANCED APPLICATIONS OF ON-LINE SYSTEMS BY INDICATING TO THOSE DEVELOPERS OF NEW SYSTEMS WHAT WORK HAS GONE ON BEFORE, SO THAT THEY MAY BUILD UPON THIS RATHER THAN BE FORCED TO REINVENT THE WHEEL. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-728 377 9/2
OFFICE OF NAVAL RESEARCH LONDON (ENGLAND)

MAN-COMPUTER INTERACTION CONFERENCE.
NATIONAL PHYSICAL LABORATORY, TEDDINGTON,
MIDDLESEX, ENGLAND. (U)

DESCRIPTIVE NOTE: CONFERENCE REPT.,
JUL 71 16P MATHIEU, RICHARD D. ;
REPT. NO. ONRL-C-11-71

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTERS, SYMPOSIA);
(*PROGRAMMING(COMPUTERS), SYMPOSIA), MAN-
MACHINE SYSTEMS, MANAGEMENT PLANNING, PATTERN
RECOGNITION, READING MACHINES, TIME SHARING,
PROGRAMMING LANGUAGES, GRAPHICS, PROGRAMMED
INSTRUCTION, REMOTE CONTROL SYSTEMS, DESIGN, GREAT
BRITAIN (U)
IDENTIFIERS: MANAGEMENT INFORMATION SYSTEMS,
COMPUTER AIDED DESIGN, COMPUTER AIDED INSTRUCTION,
COMPUTER GRAPHICS, ON LINE COMPUTERS,
INTERACTIVE COMPUTER GRAPHICS (U)

WITHIN THE PAST FEW YEARS GREAT STRIDES HAVE BEEN
MADE IN COMPUTER TECHNOLOGY, IN PARTICULAR IN REMOTE-
TERMINAL TIME-SHARING FACILITIES AND COMPUTER
LANGUAGES. FOR THE FIRST TIME THE COMPUTER AND ITS
TREMENDOUS POWERS HAVE BEEN BROUGHT WITHIN THE REACH
OF SUCH PEOPLE AS TEACHERS, DOCTORS, MANAGERS,
ARCHITECTS, DESIGNERS, ETC. THIS REPORT DESCRIBES
THE PROCEEDINGS OF THE MAN-COMPUTER INTERACTION
CONFERENCE, WHICH WAS HELD AT THE NATIONAL
PHYSICAL LABORATORY, TEDDINGTON, UK ON 2-4
SEPTEMBER 1970. EMPHASIS WAS PLACED ON THE
COMPUTER USE AND COMPUTER APPLICATIONS.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-728 565 9/2
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

XPL CGP: AN XPL-BASED SEMANTIC LANGUAGE PROCESSOR. (U)

DESCRIPTIVE NOTE: MASTER'S THESIS,
JUN 71 272P FINNE,PETER CHARLES I

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPILERS, DESIGN), (*PROGRAMMING LANGUAGES, SEMANTICS), SYNTAX, DATA PROCESSING SYSTEMS, ALGORITHMS, INPUT-OUTPUT DEVICES, COMPUTER PROGRAMS, THESES (U)
IDENTIFIERS: PARALLEL PROCESSORS, XPL PROGRAMMING LANGUAGE (U)

THE XPL CGP IS A COMPLETE COMPILER GENERATOR PACKAGE BASED ON THE XPL SYSTEM. WITH THE INTRODUCTION OF A SEMANTIC META-LANGUAGE (SML) AND AN ASSOCIATED PROCESSOR, THE PACKAGE IS CAPABLE OF GENERATING A PRODUCTION COMPILER FOR ANY COMPUTER LANGUAGE WITH A MIXED STRATEGY PRECEDENCE GRAMMAR. THE ONLY INPUT REQUIRED IN MOST CASES IS THE SYNTAX OF THE LANGUAGE ENCODED IN BNF AND THE CORRESPONDING SEMANTICS ENCODED IN SML. THE RESULTING COMPILER WILL GENERATE CODE WHICH MAY BE EXECUTED ON A SIMULATED STACK-ORIENTED MACHINE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0ML1

AD-728 711 9/2
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

AN INTERACTIVE GRAPHICAL DEBUGGING SYSTEM. (U)

DESCRIPTIVE NOTE: MASTER'S THESIS,
JUN 71 62P WALKER, ALLAN WARREN ;

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), CORRECTIONS), DATA PROCESSING SYSTEMS, DISPLAY SYSTEMS, INPUT-OUTPUT DEVICES, PROGRAMMING LANGUAGES, CONTROL SEQUENCES, THESES (U)
IDENTIFIERS: INTERACTIVE COMPUTER GRAPHICS, COMPUTER GRAPHICS, *DEBUGGING(COMPUTERS), XDS-9300 COMPUTER (U)

A SYSTEM IS DESCRIBED WHICH PROVIDES AN INTERACTIVE GRAPHICAL DEBUGGING FACILITY FOR USER PROGRAMS. THIS SYSTEM IS IMPLEMENTED ON AN ADAGE AGT-10 AND IS OPERATIONAL FOR ONLINE DEBUGGING OF HIGHER-LEVEL LANGUAGE PROGRAMS EXECUTING ON AN XDS 9300 HOST COMPUTER. SYSTEM ARCHITECTURE AND IMPLEMENTATION ARE DISCUSSED. A FORMAL DEFINITION OF THE DEBUG COMMAND LANGUAGE IS GIVEN AND A DESCRIPTION OF THE UTILIZATION OF THE COMMANDS FOR PROGRAM DEBUGGING IS PRESENTED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-729 668 9/2
NAVAL AIR SYSTEMS COMMAND WASHINGTON D C

ADVANCED AVIONIC DIGITAL COMPUTER DEVELOPMENT PROGRAM. (U)

DESCRIPTIVE NOTE: PROGRESS REPT. NO. 6, AUG 70 57P ENTNER, RONALD S. !

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO PROGRESS REPT. NO. 5, AD-729 667.

DESCRIPTORS: (*DIGITAL COMPUTERS, DESIGN), (*PROGRAMMING LANGUAGES, DESIGN), NAVAL AIRCRAFT, COMPILERS, DATA PROCESSING SYSTEMS, SYNTAX, CODING, INPUT-OUTPUT DEVICES, MODULES(ELECTRONICS), MULTIPLEX, LOGIC CIRCUITS, SHIFT REGISTERS (U)
IDENTIFIERS: AADC(ADVANCED AVIONIC DIGITAL COMPUTER), ADVANCED AVIONIC DIGITAL COMPUTERS, AVIONICS, MICROPROGRAMMING (U)

!CONTENTS: AADC TECHNOLOGY SUMMARY; AADC ASSOCIATIVE PROCESSOR INTERIM REPORT; MEMORANDUM ENTITLED: AADC WORKLOAD CHARACTERISTICS REQUIREMENTS; ADVANCED MEMORY TECHNOLOGY PROGRESS NOTE. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-729 704 9/2
ADMIRALTY SURFACE WEAPONS ESTABLISHMENT PORTSMOUTH (ENGLAND)

CORAL 66 LIBRARY PROCEDURES FOR MECSL 900 COMPUTERS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAR 71 125P SMITH,M. H. A. ;
REPT. NO. ASWE-TR-71-15
MONITOR: NSTIC 30367

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *COMPILERS), COMPUTER STORAGE DEVICES, LIBRARIES, SPECIFICATIONS, COMPUTER PROGRAMS, CODING, INPUT-OUTPUT DEVICES, DATA PROCESSING SYSTEMS, GREAT BRITAIN (U)
IDENTIFIERS: *CORAL 66 PROGRAMMING LANGUAGE (U)

THIRTY-NINE GENERAL LIBRARY PROCEDURES ARE PRESENTED WHICH, ALTHOUGH WRITTEN IN CORAL 66 FOR USE ON THE MECSL 900 RANGE OF COMPUTERS, SHOULD BE READILY TRANSFERABLE TO ANY OTHER MACHINE. FOR EACH PROCEDURE THERE IS GIVEN A DESCRIPTION, THE CORAL TEXT AND THE COMPILED CODE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-729 887 9/2
MITRE CORP BEDFORD MASS

A GUIDE TO THE POTENTIAL USE OF SIMSCRIPT. (U)

SEP 71 45P BURLESON,P. R. ;
REPT. NO. MTR-2115
CONTRACT: F19628-71-C-0002
PROJ: MITRE-5720
MONITOR: ESD TR-71-346

UNCLASSIFIED REPORT

DESCRIPTORS: (•PROGRAMMING LANGUAGES, DESIGN), PROGRAMMING(COMPUTERS), DATA PROCESSING SYSTEMS, SIMULATION (U)
IDENTIFIERS: •SIMSCRIPT PROGRAMMING LANGUAGE, DIGITAL SIMULATION, DATA STRUCTURES, SIMULATION LANGUAGES, SIMSCRIPT 2 PROGRAMMING LANGUAGE (U)

THE REPORT (1) IDENTIFIES THE FEATURES WHICH DISTINGUISH SIMSCRIPT FROM GENERAL PROGRAMMING LANGUAGES, PERMITTING READERS TO JUDGE FOR THEMSELVES THE BENEFITS OF USING SIMSCRIPT IN THEIR OWN APPLICATIONS; OUTLINES THE LANGUAGE AND IMPLEMENTATION DIFFERENCES BETWEEN THE VARIOUS VERSIONS OF SIMSCRIPT; SPECIFIES THE RESOURCE REQUIREMENTS AND RELATIVE ADVANTAGES OF IMPLEMENTING EACH VERSION OF SIMSCRIPT AT MITRE/ESD; AN INVESTIGATES THE DESIRABILITY OF USING SIMSCRIPT AT ESD FOR ANALYZING PROBLEMS RELATED TO COMPUTER PERFORMANCE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOHL1

AD-729 941 9/2
CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER SCIENCE

CONVERSATIONAL PROGRAMMING - APL, AN IMPLEMENTATION IN BLISS, (U)

JUN 71 52P PERLIS,A. J. ;FENNELL,R. D. ;POLLACK,F. J. ;PRICE,W. R. ;RIZZO,M. F. ;

CONTRACT: F44620-70-C-0107, ARPA ORDER-827
MONITOR: AFOSR TR-71-2376

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), DATA PROCESSING SYSTEMS, COMPILERS, CONTROL SEQUENCES, INPUT-OUTPUT DEVICES, SEQUENCES (U)
IDENTIFIERS: APL PROGRAMMING LANGUAGE, BLISS PROGRAMMING LANGUAGE, *CONVERSATIONAL PROGRAMMING (U)

AS PART OF THE ONGOING RESEARCH PROGRAM IN CONVERSATIONAL PROGRAMMING AN APL SYSTEM HAS BEEN IMPLEMENTED FOR THE PDP-10. AS THIS SYSTEM IS TO BE A BASE FOR EXTENSIVE STUDY IN CONVERSATIONAL PROGRAMMING THE SYSTEM WAS PROGRAMMED ENTIRELY IN BLISS, A HIGH-LEVEL PROGRAMMING LANGUAGE SPECIFICALLY DESIGNED FOR THE WRITING OF SYSTEMS PROGRAMS. A FEW EXTENSIONS TO APL ARE INCLUDED IN THIS FIRST VERSION WHICH SUPPORTS BOTH TELETYPE AND IBM/DATEL TERMINALS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-730 033 9/2 12/2
GEORGIA UNIV ATHENS DEPT OF STATISTICS

AN ON-LINE STATISTICAL COMPUTER SYSTEM FOR LAY USAGE. VOLUME I. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAY 71 152P PENN, LUCIUS W. ;
REPT. NO. TR-68-VOL-1, THEMIS-UGA-14-VOL-1
CONTRACT: N00014-69-A-0423
PROJ: NR-042-261

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-730 034.

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), TIME SHARING), (*STATISTICAL ANALYSIS, PROBLEM SOLVING), DATA PROCESSING SYSTEMS, GRAPHICS, COMPILERS, PROGRAMMING LANGUAGES, MAN-MACHINE SYSTEMS, INTERACTIONS, DISPLAY SYSTEMS, SUBROUTINES, TIME SERIES ANALYSIS (U)
IDENTIFIERS: GPL PROGRAMMING LANGUAGE, FORTRAN, *CONVERSATIONAL PROGRAMMING, INTERACTIVE COMPUTER GRAPHICS, THEMIS PROJECT, COMPUTER SYSTEMS HARDWARE, ON LINE COMPUTERS (U)

THE REPORT DISCUSSES THE DEVELOPMENT OF AN ON-LINE COMPUTING SYSTEM WHICH FACILITATES THE PREPARATION AND USE ON CONVERSATIONAL UNITS FOR STATISTICAL ANALYSIS. THE BASIC ASSUMPTIONS UNDERLYING THIS DEVELOPMENT WERE: THAT A RESEARCHER WANTS TO USE SUCH A SYSTEM EVEN THOUGH HIS BACKGROUND IN STATISTICS AND COMPUTATION IS LIMITED; THAT HE SHOULD BE ABLE TO DO THIS WITHOUT HAVING TO LEARN MUCH STATISTICS AND COMPUTER PROGRAMMING. THROUGH THIS SYSTEM A STATISTICIAN IS ABLE TO PREPARE CONVERSATIONAL UNITS, AND A LAY USER IS ABLE TO PERFORM HIS ANALYSIS ON THE BASIS OF SUCH UNITS. THE EXPERIMENTAL TERMINAL IS THE IBM 2250 GRAPHICS DISPLAY (IN THE STATISTICS DEPARTMENT) ON-LINE TO THE IBM 360/65 (IN THE COMPUTER CENTER), BOTH DEPARTMENTS BEING LOCATED IN THE GRADUATE STUDIES RESEARCH CENTER. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-730 034 9/2 12/1
GEORGIA UNIV ATHENS DEPT OF STATISTICS

AN ON LINE STATISTICAL COMPUTER SYSTEM FOR LAY USAGE. VOLUME II. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAY 71 256P PENN,LUCIUS W. ;
REPT. NO. TR-68-VOL-2, THEMIS-UGA-14-VOL-2
CONTRACT: N0001 4-69-A-0423
PROJ: NR-042-261

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-730 033.

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), TIME SHARING), (*STATISTICAL ANALYSIS, PROBLEM SOLVING), DATA PROCESSING SYSTEMS, COMPILERS, GRAPHICS, PROGRAMMING LANGUAGES, MAN-MACHINE SYSTEMS, INTERACTIONS, DISPLAY SYSTEMS, SUBROUTINES (U)

IDENTIFIERS: GPL PROGRAMMING LANGUAGE, FORTRAN, *CONVERSATIONAL PROGRAMMING, INTERACTIVE COMPUTER GRAPHICS, COMPUTER SYSTEMS HARDWARE, *MACROPROGRAMMING, THEMIS PROJECT, ON LINE COMPUTERS (U)

;CONTENTS: COMAP--A CONVERSATIONAL MACRO PACKAGE FOR THE IBM 2250; GPL--A GRAPHICS PROGRAMMING LANGUAGE FOR THE IBM 2250; EXAMPLE OF THE USE OF GPL TO PREPARE A STATISTICAL CONVERSATIONAL UNIT; OTHER PROGRAM MODULES OF THE STATISTICAL ON-LINE SYSTEM. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-730 053 9/2
NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER BETHESDA MD

COMPUTER NETWORK SIMULATOR. (U)

DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT REPT.,
SEP 71 35P REDDING, JOHN L.;
REPT. NO. NSRDC-3650
PROJ: F35-411

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, NETWORKS), DATA TRANSMISSION SYSTEMS, TIME SHARING, PROGRAMMING LANGUAGES, QUEUEING THEORY, ALGORITHMS (U)

A MODEL FOR A NETWORK OF COMPUTERS HAS BEEN DEVELOPED AND A SIMULATION PROGRAM HAS BEEN PRODUCED. A NETWORK OF COMPUTERS CONSISTS OF TWO OR MORE COMPUTER SYSTEMS WHICH COMMUNICATE WITH EACH OTHER AND WHICH MAY HAVE THEIR OWN FAMILY OF REMOTE TERMINALS AND MAY BE, BUT ARE NOT NECESSARILY, GEOGRAPHICALLY SEPARATED. THE COMPUTER LOCATED AT EACH NODE OF THE NETWORK IS CHARACTERIZED BY ITS MULTIPROGRAMMING CAPABILITY, THE AMOUNT OF MAIN STORAGE AVAILABLE, THE NUMBER OF I/O CHANNELS AVAILABLE, AND ITS JOB STREAM. THE JOB STREAM IS DESCRIBED BY A SET OF PROBABILITY DISTRIBUTIONS. THE NETWORK ITSELF IS DESCRIBED BY THE NODE CONNECTIONS. AN ALGORITHM IS GIVEN TO DETERMINE WHETHER ALL THE NODES OF THE NETWORK FORM A CONNECTED GRAPH. A DYNAMIC ROUTING ALGORITHM IS GIVEN TO DETERMINE THE ROUTE WHICH A MESSAGE SHOULD TRAVERSE IN A NON-FULLY CONNECTED NETWORK FOR A COMPUTER-TO-COMPUTER COMMUNICATION. THE SIMULATOR FACILITATES THE ANALYSIS OF TRADEOFFS BETWEEN CENTRALIZED AND DISTRIBUTED DATA BASES, THE STUDY OF NETWORK PERFORMANCE, AND COMMUNICATION LINE AND DATA BANK UTILIZATION. THE SOLUTION OF A SAMPLE PROBLEM IS INCLUDED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-730 453 9/2
FLORIDA STATE UNIV TALLAHASSEE COMPUTER-ASSISTED INSTRUCTION CENTER

A PROGRAMMING LANGUAGE/1500 (APL/1500) OPERATOR'S GUIDE, (U)

AUG 71 29P MCMURCHIE, THOMAS D. ; KRUEGER, SCOTT E. ;
REPT. NO. CAI-SYSTEMS MEMO-13
CONTRACT: N00014-68-A-0494
PROJ: NR-154-280

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), INSTRUCTION MANUALS), PROGRAMMING LANGUAGES, CONTROL SEQUENCES, DATA PROCESSING SYSTEMS, ERRORS (U)
IDENTIFIERS: APL PROGRAMMING LANGUAGE (U)

THE DOCUMENT DESCRIBES THE PROCEDURES NECESSARY FOR STARTING, RUNNING, AND STOPPING THE APL/1500 SYSTEM. ADDITIONALLY, IT DESCRIBES ALL SYSTEM COMMANDS THAT ARE NECESSARY FOR THE ADMINISTRATION OF THE APL/1500 SYSTEM. OPERATION OF THE RECORDING TERMINAL FEATURE WHICH PROVIDES A SYSTEM LOG IS ALSO DESCRIBED. THIS DOCUMENT IS A REVISION OF THE ORIGINAL OPERATOR'S GUIDE SUPPLIED BY SRA IN 1968 WITH THE FIRST RELEASE OF THE APL SYSTEM FOR THE 1500. IT INCORPORATES A NUMBER OF EXTENSIONS TO THE IMPLEMENTATION OF APL INCLUDING FILE HANDLING CAPABILITIES, IMPROVED DIRECTORY OPERATIONS, AND REMOTE TERMINAL EXECUTION CONTROLS. THE FEATURES REPORTED HERE ARE INTENDED FOR USE ONLY BY PRIVILEGED USERS OF THE APL/1500 SYSTEM. ONLY THE SYSTEM OPERATOR OR OTHER EQUALLY QUALIFIED PERSON SHOULD BE PERMITTED ACCESS TO THESE FEATURES AS MISUSE OF THE CONCEPTS EMPLOYED MAY PERMANENTLY DAMAGE THE SYSTEM. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-730 608 9/2
MITRE CORP BEDFORD MASS

SURVEY OF SIMULATION LANGUAGES AND PROGRAMS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JUL 71 127P DESROCHES, JOAN C.
REPT. NO. MTR-2040
CONTRACT: F19628-71-C-0002
PROJ: AF-5720
MONITOR: ESD TR-71-227

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, REVIEWS), SIMULATION, MATHEMATICAL MODELS, PROGRAMMING(COMPUTERS), DATA PROCESSING SYSTEMS, INSTRUCTION MANUALS (U)
IDENTIFIERS: DIGITAL SIMULATION, HYBRID SIMULATION, COMPUTERIZED SIMULATION, *SIMULATION LANGUAGES (U)

THE REPORT DOCUMENTS A SURVEY OF AVAILABLE SIMULATION LANGUAGES AND PROGRAMS OF POTENTIAL APPLICABILITY TO THE SIMULATION OF ADPE SYSTEMS. THE MAJOR FEATURES OF THE SUBJECT LANGUAGES ARE DISCUSSED AND A COMPREHENSIVE BIBLIOGRAPHY IS INCLUDED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-730 865 9/2
MASSACHUSETTS INST OF TECH CAMBRIDGE

LIST TRACING IN SYSTEMS ALLOWING MULTIPLE CELL-TYPES. (U)

71 SP FENICHEL,ROBERT R. 1
CONTRACT: N0001 4-70-A-0362-0001

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN COMMUNICATIONS OF THE ACM, V14 NB P522-526 AUG 71.
SUPPLEMENTARY NOTE: PRESENTED AT THE PROCEEDINGS OF THE SYMPOSIUM ON SYMBOLIC AND ALGEBRAIC MANIPULATION (2ND), P242-247, 23-25 MAR 71.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DATA PROCESSING SYSTEMS), COMPILERS, COMPUTER STORAGE DEVICES, ALGORITHMS (U)
IDENTIFIERS: LIST PROCESSING LANGUAGES, LISP PROGRAMMING LANGUAGE, PL/1 PROGRAMMING LANGUAGE (U)

LIST-PROCESSING SYSTEMS HAVE EACH ALLOWED THE USE OF ONLY A SINGLE SIZE AND CONFIGURATION OF LIST CELL. IN THIS PAPER A SYSTEM IS DESCRIBED WHICH ALLOWS THE USE OF ARBITRARILY MANY DIFFERENT SIZES AND CONFIGURATIONS OF LIST CELLS, POSSIBLY NOT SPECIFIED UNTIL RUN TIME. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-731 232 9/2
CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER SCIENCE

C.AI--A LISP PROCESSOR FOR C.AI. (U)

AUG 71 62P BARBACCI,M. ;GOLDBERG,M. ;
KNUDSEN,M. ;
REPT. NO. CMU-CS-71-103
CONTRACT: F44620-70-C-0107
PROJ: AF-9749
MONITOR: AFOSR TR-71-2656

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN), COMPILERS, SHIFT REGISTERS, COMPUTER LOGIC, DATA PROCESSING SYSTEMS, CODING (U)
IDENTIFIERS: MICROPROGRAMMING, *LISP PROGRAMMING LANGUAGE, COMPUTER STORAGE MANAGEMENT (U)

A SPECIAL MICROPROGRAM CONTROLLED PROCESS DESIGNED FOR EFFICIENT INTERPRETATION OF THE LISP LANGUAGE IS DESCRIBED. THE PROCESSOR HAS A FAIRLY LARGE, FAST SCRATCH-PAD MEMORY AND USES TWO CACHE MEMORIES: FOR THE LISP PROGRAM AND DATA BEING INTERPRETED: AND FOR THE LISP INTERPRETER, SEVERAL SPECIAL PURPOSE REGISTERS, SMALL FUNCTION UNITS, AND GENERAL BYTE MANIPULATION CAPABILITIES ARE PRESENT. THE APPROACH TAKEN HAS BEEN TO AVOID UNORTHODOX IMPLEMENTATION SCHEMES AND EMPLOYS LITTLE IN THE WAY OF UNUSUALLY NEW (AND UNTRIED) HARDWARE; SUCH A CONSERVATIVE APPROACH SHOULD ENABLE AND IMPLEMENTATION IN A REASONABLE LENGTH OF TIME. THE MICROPROGRAMMED PROCESSES INCLUDE A STORAGE-COMPACTING GARBAGE-COLLECTOR, WHICH CAN BE MADE TO OPERATE INCREMENTALLY IN PARALLEL WITH USER-PROGRAM EXECUTION. THIS OPTION AVOIDS INTERRUPTIONS IN LISP EXECUTION FOR GARBAGE COLLECTION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-731 349 9/2
RAND CORP SANTA MONICA CALIF

ON THE FUTURE OF COMPUTER PROGRAM SPECIFICATION AND ORGANIZATION. (U)

AUG 71 20P BALZER, R. M.
REPT. NO. R-622-ARPA
CONTRACT: DAHC15-67-C-0141, ARPA ORDER-189-1

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), SPECIFICATIONS), SUBROUTINES, INTERFACES, PROGRAMMING LANGUAGES, DATA PROCESSING SYSTEMS, COMPUTER LOGIC, SYNTAX (U)
IDENTIFIERS: PL/1 PROGRAMMING LANGUAGE (U)

THE REPORT SUMMARIZES THE CURRENTLY AVAILABLE METHODS OF ORGANIZING COMPUTER PROGRAMS--SUBROUTINE PYRAMID, GENERATORS, CO-ROUTINES, AND PASSED SUBROUTINES--AND PRESENTS AN ALTERNATIVE CONCEPT, PROGRAM INTEGRATION, BASED ON USE OF THE TOTAL CONTEXT RATHER THAN SPECIFIC PROCEDURES. MOST OF A TYPICAL PROGRAM IS DEVOTED TO HOUSEKEEPING DATA--SUBROUTINE SAVE AREAS, PARAMETER PASSING MECHANISMS, INDICES, POINTERS, TREE AND LIST STRUCTURES, DICTIONARIES--THAT HAVE NOTHING TO DO WITH THE SPECIFIC PROBLEM BUT RATHER WITH ITS COMPUTER SOLUTION. PROGRAMS EXPRESSED ENTIRELY IN PROBLEM-SPECIFIC TERMS REQUIRE IMPLIED RATHER THAN SPECIFIED PROCESSING: LOGICAL PROCESS SPECIFICATIONS NOT AFFECTED BY DATA REPRESENTATION: DYNAMIC LINKAGE BY THE SYSTEM OF SEPARATE SPECIFICATIONS, WITH DYNAMIC ADAPTIVE MODIFICATION AT EXECUTION: AND DYNAMIC REQUESTING OF INFORMATION AS REQUIRED FROM THE CURRENT CONTEXT. STEPS IN THIS DIRECTION INCLUDE CORC, DWIM, VERS, QUESTION-ANSWERING SYSTEM, PL/I ON-UNITS, DATALESS PROGRAMMING AND PORTS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-732 207 9/2
DARTMOUTH COLL HANOVER N H KIEWIT COMPUTATION CENTER

GRAPHIDI: A SYSTEM FOR EXPANDING DARTMOUTH BASIC TO PRODUCE GRAPHICAL DISPLAYS WITHIN A TIME-SHARING ENVIRONMENT. VOLUME I. (U)

DESCRIPTIVE NOTE: MASTER'S THESIS,
JAN 71 250P CONN, ALEX P. ;
CONTRACT: F44620-68-C-0015
PROJ: AF-9769
MONITOR: AFOSR TR-71-2746

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-732 208.

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), GRAPHICS), (*DATA PROCESSING SYSTEMS, TIME SHARING), PROGRAMMING LANGUAGES, DISPLAY SYSTEMS, COMPILERS, COMPUTER LOGIC, PLOTTERS, PATTERN RECOGNITION, COMPUTER PROGRAMS, COMPUTER STORAGE DEVICES, INPUT-OUTPUT DEVICES, THESES (U)
IDENTIFIERS: *INTERACTIVE COMPUTER GRAPHICS, *COMPUTER GRAPHICS, BASIC PROGRAMMING LANGUAGE, GRAPHIDI(GRAPHICAL INTERPRETIVE DISPLAY SYSTEM), GRAPHICAL INTERPRETIVE DISPLAY SYSTEM (U)

GRAPHIDI (GRAPHICAL INTERPRETIVE DISPLAY SYSTEM) IS A SYSTEM FOR EXPANDING DARTMOUTH BASIC TO GENERATE AND MANIPULATE PICTURES AND DIAGRAMS ON A NUMBER OF GRAPHICAL OUTPUT DEVICES AVAILABLE IN TIME-SHARING. THE USER ENTERS A PROGRAM WRITTEN IN BASIC, INCLUDING A SERIES OF GRAPHICAL COMMANDS AS PART OF HIS PROGRAM. GRAPHIDI INTERPRETS THIS CODING AND CREATES A NEW BASIC PROGRAM WHICH CARRIES OUT THE STANDARD BASIC INSTRUCTIONS AND OUTPUTS THE NECESSARY GRAPHICAL INFORMATION TO THE DIGITAL EQUIPMENT CORPORATION PDP-9 GRAPHIC-2 OR TEKTRONIX T4002 SCOPES FOR VISUAL DISPLAY, OR TO THE TIMESHARE DEVICES, INC. (TDI) PLOTTER FOR HARD COPY. A SPECIAL GRAPHICAL DEFINITION CAPABILITY ENABLES A USER TO DEFINE A SET OF COMPOSITE OR GRAPHICAL EEENTITIES USING NAMES OF HIS CHOOSING. GRAPHIDI BUILDS A HIERARCHICAL INKED DATA STRUCTURE THAT MAKES POSSIBLE A VARIETY OF MANIPULATIVE COMMANDS FOR ROTATING, MOVING, MAGNIFYING, OR DELETING NTITIES DISPLAYED. A WINDOW COMMAND ENABLES THE USER TO VIEW ONLY A SELECTED PORTION OF THE ENTIRE DRAWING. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-732 297 9/2
HAWAII UNIV HONOLULU

UNIVERSITY OF HAWAII, TIME SHARING SYSTEM. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JUL 71 35P BASS.,CHARLIE C. ;
REPT. NO. B71-5
CONTRACT: F44620-69-C-0030
PROJ: AF-9558
MONITOR: AFOSR TR-71-2735

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, *TIME SHARING), (*PROGRAMMING(COMPUTERS), INSTRUCTION MANUALS), CONTROL SEQUENCES, PROGRAMMING LANGUAGES, DATA TRANSMISSION SYSTEMS (U)
IDENTIFIERS: *ALOHA SYSTEM, STATUS COMPUTER PROGRAM, BASIC PROGRAMMING LANGUAGE, FORTRAN, PL/1 PROGRAMMING LANGUAGE, COMPUTER NETWORKS (U)

SINCE SEPTEMBER 1968, THE ALOHA SYSTEM HAS SUPPORTED THE DEVELOPMENT OF A TIME-SHARING SYSTEM, UHTSS, FOR THE IBM 360/65 TO MEET BOTH THE NEEDS OF THE ALOHA SYSTEM AND THE UNIVERSITY OF HAWAII COMPUTING COMMUNITY. THIS PAPER IS A DESCRIPTION OF HOW TO USE UHTSS. IT CONTAINS EXPLANATION AND A FEW EXAMPLES OF THE DIFFERENT COMMANDS AND FEATURES AVAILABLE TO THE USER. IN ADDITION, THERE IS AN EXTENDED DESCRIPTION OF 1) BASIC, THE PRIMARY LANGUAGE AVAILABLE ON UHTSS, 2) DESK, THE DESK CALCULATOR MODE OF UHTSS NAD 3) STATUS, THE FACILITY FOR INFORMATION ABOUT THE BATCH OPERATION OF THE 360. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-732 972 9/2 5/2
WASHINGTON UNIV SEATTLE DEPT OF PSYCHOLOGY

A METHOD FOR BUILDING DATA MANAGEMENT PROGRAMS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
DEC 70 29P HUNT,EARL ;KILDALL,GARY ;
REPT. NO. TR-70-12-09
CONTRACT: NSF-87-1438R; AF-AFOSR-1944-70
PROJ: AF-9778
MONITOR: AFOSR TR-71-2853

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING SYSTEMS; *PROGRAMMING(COMPUTERS)), (*INFORMATION RETRIEVAL, DATA PROCESSING SYSTEMS); SUBROUTINES, PROGRAMMING LANGUAGES, GRAPHICS (U)
IDENTIFIERS: *DATA MANAGEMENT, DATA STRUCTURES (U)

DATA MANAGEMENT IS USUALLY DONE THROUGH A SET OF SUBROUTINES, CALLED A KERNEL PACKAGE. THE PROGRAMMER USING OR MODIFYING A SYSTEM DESIGNED WITH THE KERNEL PACKAGE NEED ONLY GRASP THE FEW SIMPLE CONCEPTS AND OPERATIONS INVOLVED IN THE KERNEL. THIS APPROACH WAS APPLIED IN THE CONSTRUCTION OF THREE SUBSTANTIAL APPLICATIONS: A CONVERSATIONAL VERSION OF COMPUTER LANGUAGE, A GENERALIZED INFORMATION RETRIEVAL SYSTEM, AND A SYSTEM FOR GRAPHICS BASED INFORMATION RETRIEVAL.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-733 184 5/9 9/2
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

CAI-BASIC: A PROGRAM TO TEACH THE PROGRAMMING LANGUAGE 'BASIC'. (U)

DESCRIPTIVE NOTE: MASTER'S THESIS,
SEP 71 121P BARRY, THOMAS ANTHONY I

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMED INSTRUCTION, *PROGRAMMING LANGUAGES), DIGITAL COMPUTERS, STUDENTS, TIME SHARING, COMPUTER PROGRAMS, CORRECTIONS, THESES (U)
IDENTIFIERS: *BASIC PROGRAMMING LANGUAGE, *COMPUTER AIDED INSTRUCTION, FORTRAN 4 PROGRAMMING LANGUAGE, FORTRAN, CAI-BASIC COMPUTER PROGRAM (U)

THE PAPER PRESENTS A COMPUTER AIDED INSTRUCTION PROGRAM THAT FULFILLS THE OBJECTIVES OF TEACHING A SIMPLE PROGRAMMING LANGUAGE, INTERPRETING STUDENT RESPONSES, AND EXECUTING AND EDITING STUDENT PROGRAMS. THE CAI-BASIC PROGRAM IS WRITTEN IN FORTRAN IV, LEVEL G, AND EXECUTES ON IBM-2741 TERMINALS WHILE RUNNING UNDER THE CP-67/CMS TIME SHARING SYSTEM ON THE U.S. NAVAL POSTGRADUATE SCHOOL'S IBM-360/67 COMPUTER SYSTEM. THE INSTRUCTIONAL PHASE OF CAI-BASIC PRESENTS THE FUNDAMENTALS OF BASIC, A SIMPLE USER ORIENTED LANGUAGE, IN SEVEN LESSONS. DURING THE INSTRUCTIONAL SESSIONS THE STUDENT IS PRESENTED MATERIAL AND, BASED ON HIS RESPONSE TO QUESTIONS, HE IS ROUTED TO THE NEXT SEQUENCE OF INSTRUCTIONS. THE EXECUTION PHASE OF CAI-BASIC ALLOWS EXECUTION OF 'BASIC' PROGRAMS, AND HAS AN OPTIONAL DEBUG FEATURE THAT PROVIDES A TRACE OF PROGRAM VARIABLES TO AID THE STUDENT IN FINDING PROGRAMMING ERRORS. IN THE EVENT OF PROGRAMMING ERRORS THE USER MAY ENTER AN EDIT MODE TO CORRECT MISTAKES IN HIS PROGRAM. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-733 454 9/2 17/7
NAVAL RESEARCH LAB WASHINGTON D C

HIGH LEVEL AEROSPACE COMPUTER PROGRAMMING LANGUAGE CONFERENCE HELD AT NAVAL RESEARCH LABORATORY, WASHINGTON, D. C, ON 29 AND 30 JUNE 1970. (U)

JUN 70 24SP

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, SYMPOSIA), (*SPECIAL PURPOSE COMPUTERS, NAVAL AIRCRAFT), DIGITAL COMPUTERS, NAVIGATION COMPUTERS, FIRE CONTROL COMPUTERS, COMPILERS (U)
IDENTIFIERS: AADC(ADVANCED AVIONIC DIGITAL COMPUTER), ADVANCED AVIONIC DIGITAL COMPUTERS, AVIONICS, GENERAL PURPOSE COMPUTERS, AIRBORNE COMPUTERS, COMPUTER SYSTEMS HARDWARE (U)

!CONTENTS: DIGITAL COMPUTERS: A DECADE OF ADVANCEMENT; THE ADVANCED AVIONIC DIGITAL COMPUTER; THE INCLUSION OF TEST-TYPE INSTRUCTIONS IN HIGH LEVEL LANGUAGE SYNTAX; PROVIDING AN EFFICIENT MATCH BETWEEN A HIGH LEVEL PROGRAMMING LANGUAGE AND A COMPUTER INSTRUCTION REPERTOIRE; CLASP - ITS ROLE IN AADC SOFTWARE DEVELOPMENT; SPACE PROGRAMMING LANGUAGE; FLIGHT SOFTWARE COMES OF AGE; A TECHNICAL OVERVIEW OF COMPILER MONITOR SYSTEM 2. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-733 805 9/2 5/9
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

APPLICATION OF HYBRID COMPUTERS IN SCIENTIFIC AND ENGINEERING CALCULATIONS. (U)

SEP 71 21P BURDYCH, BORIVOJ
REPT. NO. FTD-HC-23-819-71

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF AUTOMATIZACE (CZECHOSLOVAKIA) V12 N12 P330-335 1969.

DESCRIPTORS: (*ANALOG-DIGITAL COMPUTERS, OPERATION), (*PROGRAMMERS, TRAINING), ANALOG COMPUTERS, DIGITAL COMPUTERS, INTERFACES, PROGRAMMING(COMPUTERS), PROGRAMMING LANGUAGES, CZECHOSLOVAKIA (U)
IDENTIFIERS: TRANSLATIONS, *HYBRID COMPUTERS, COMPUTER SYSTEMS HARDWARE (U)

COMPUTERS MARKETED BY THE ELECTRONIC ASSOCIATES INC. OF USA AND THE TECHNIQUE OF USAGE OF THESE COMPUTERS ARE DESCRIBED. THE NECESSARY QUALIFICATIONS FOR THE TRAINING OF OPERATORS OF THESE COMPUTERS IN CZECHOSLOVAKIA AND LACK OF SUITABLE TEXTBOOKS AVAILABLE IN THE CZECH LANGUAGE FOR THE TRAINING OF THESE OPERATORS IS DISCUSSED. (U)

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-734 143 9/2 17/7
NAVAL AIR SYSTEMS COMMAND WASHINGTON D C

ADVANCED AVIONIC DIGITAL COMPUTER
DEVELOPMENT PROGRAM. (U)

DESCRIPTIVE NOTE: PROGRESS REPT. NO. 9,
NOV 71 86P ENTNER, RONALD S. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO PROGRESS REPT. NO. 8, AD-727 607.

DESCRIPTORS: (*NAVIGATION COMPUTERS, DESIGN), DIGITAL COMPUTERS, DATA STORAGE SYSTEMS, PROGRAMMING LANGUAGES, CONTROL SYSTEMS, OPERATION, NAVAL AIRCRAFT (U)
IDENTIFIERS: AADC(ADVANCED AVIONICS DIGITAL COMPUTER), ADVANCED AVIONICS DIGITAL COMPUTER, AVIONICS, COMPUTER SYSTEMS HARDWARE, COMPUTER SYSTEMS PROGRAMS (U)

:CONTENTS: PRELIMINARY STATEMENT OF WORK OF A PLAN TO DEFINE HIGH ORDER LANGUAGE PRIMITIVES FOR THE AADC; DOCUMENTATION SUPPORTING REQUEST FOR APPROVAL OF RFP FOR HIGH LEVEL PROGRAMMING STUDY; NAVAIR R AND D PROGRAM IN AIRCRAFT POWER SYSTEMS FOR THE 1970'S. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-734 168 9/2 15/5
NAVY FLEET MATERIAL SUPPORT OFFICE MECHANICSBURG PA

LARGE COBOL CONVERSION - A STRATEGY FOR CONTROLLED CHANGE. (U)

OCT 71 6P RUTH,STEPHEN R. I
REPT. NO. FMSO-UUA-2

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, TRANSFORMATIONS), (*INVENTORY CONTROL, NAVAL EQUIPMENT), DATA PROCESSING SYSTEMS, INTERFACES, COSTS (U)
IDENTIFIERS: COBOL (U)

THE ARTICLE ADDRESSES THE RESULTS OF A COOPERATIVE EFFORT BETWEEN UNIVAC AND THE NAVY IN THE IMPLEMENTATION OF A COBOL CONVERSION PROGRAM FOR A LARGE DATA SYSTEM. THE SYSTEM DISCUSSED IS THE NAVY UNIFORM INVENTORY CONTROL POINT SYSTEM WHICH OPERATES ON 7 U494 AND 3 U490 COMPUTERS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-734 314 9/2 12/1
HARRY DIAMOND LABS WASHINGTON D C

DSL/90 PROGRAMMING MANUAL. (U)

OCT 71 256P BLOOM,HOWARD M. I
REPT. NO. HDL-TM-71-13
PROJ: HDL-39833

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INSTRUCTION MANUALS), (*DIFFERENTIAL EQUATIONS, NUMERICAL ANALYSIS), DIGITAL COMPUTERS, INPUT-OUTPUT DEVICES, COMPILERS, INTEGRATION, COMPUTER PROGRAMS (U)
IDENTIFIERS: DSL/90 PROGRAMMING LANGUAGE, SIMULATION LANGUAGES, FORTRAN, APPLICATIONS OF MATHEMATICS, IBM 7094 COMPUTERS, NUMERICAL INTEGRATION (U)

THE MANUAL DESCRIBES THE IBM 7094 COMPUTER PROGRAMMING LANGUAGE DSL/90 (DIGITAL SIMULATION LANGUAGE), USED FOR SOLVING CONTINUOUS SYSTEMS THAT CAN BE EXPRESSED AS SETS OF ORDINARY DIFFERENTIAL EQUATIONS. THE LANGUAGE STRUCTURE IS SO SIMPLE THAT PREVIOUS COMPUTER EXPERIENCE IS UNNECESSARY IN LEARNING HOW TO WRITE DSL/90 PROGRAMS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0ML1

AD-735 148 9/2 6/4
MASSACHUSETTS INST OF TECH CAMBRIDGE PROJECT MAC

PROJECT MAC PROGRESS REPORT VIII, JULY 1970 TO JULY 1971. (U)

DESCRIPTIVE NOTE: ANNUAL PROGRESS REPT., JUL 71 233P LICKLIDER, J. C. R.; FREDKIN, EDWARD;
CONTRACT: N00014-70-A-0362-0001, DAHC15-69-C-0347

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SPONSORED IN PART BY GRANT NGR-22-009-393, NSF-GJ-432, SEE ALSO PROGRESS REPT. NO. 7, AD-732 767.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, REPORTS), (*PROGRAMMING(COMPUTERS), REPORTS), (*ARTIFICIAL INTELLIGENCE, REPORTS), MAN-MACHINE SYSTEMS, PROGRAMMING LANGUAGES, PATTERN RECOGNITION, TIME SHARING, INPUT-OUTPUT DEVICES, MATHEMATICAL MODELS, INTERFACES, COMPILERS, COMPUTER LOGIC, AUTOMATA, MATHEMATICAL ANALYSIS, INFORMATION RETRIEVAL, EDUCATION, GRAPHICS, REAL TIME (U)
IDENTIFIERS: MAC PROJECT, INFORMATION SYSTEMS, MULTIPROCESSING, *AUTOMATA THEORY, *INTERACTIVE COMPUTER GRAPHICS, *CELLULAR AUTOMATA, COMPUTER NETWORKS, COMPUTER GRAPHICS (U)

;CONTENTS: ARTIFICIAL INTELLIGENCE; AUTOMATA THEORY; CELLULAR AUTOMATA; COMPUTATION STRUCTURES; COMPUTER SYSTEMS RESEARCH; DYNAMIC MODELING, GRAPHICS AND NETWORKS; EDUCATION; IMPLICIT COMPUTATION; INTERACTIVE MANAGEMENT SYSTEMS; MATHLAB; PROGRAMMING LANGUAGES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-735 300 9/2
CALIFORNIA UNIV SANTA BARBARA

RESEARCH IN ON-LINE COMPUTATION, (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 JUL 70-31 AUG 71,
SEP 71 87P HARRIS, DAVID O, ;HOWARD,
JAMES A. ;WOOD, ROGER C. ;
CONTRACT: F19628-70-C-0314, ARPA ORDER-865
PROJ: AF-8684
MONITOR: AFCRL 71-0530

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, NETWORKS),
(*SPEECH RECOGNITION, COMPUTERS), DATA
TRANSMISSION SYSTEMS, PROGRAMMING LANGUAGES, CONTROL
SEQUENCES, GRAPHICS, SPEECH COMPRESSION,
PHONETICS, WAVE FUNCTIONS (U)
IDENTIFIERS: COMPUTER NETWORKS, ON LINE SYSTEMS,
FORTRAN, PL/1 PROGRAMMING LANGUAGE, ASSEMBLY
LANGUAGES (U)

DEVELOPMENTS FOR THE ARPA NETWORK INCLUDE A NETWORK CONTROL PROGRAM, A USER TELNET AND PROVIDING A VARIETY OF SERVICES FOR NETWORK USERS. DEVELOPMENT FOR THE ON-LINE SYSTEM INCLUDED REDUCING CORE REQUIREMENTS, IMPROVEMENTS TO THE INTERNAL SCHEDULING ALGORITHMS, AND DEVELOPING A MULTI-LINE CONTROLLER TO PROVIDE GREATER LATITUDE IN SYSTEM CAPABILITY. THE SPEECH PROJECT CONTINUED PROGRESS IN THE WAVE FUNCTION ANALYSIS/SYNTHESIS TECHNIQUES, CLASSIFICATION AND RECOGNITION OF PHONETIC INFORMATION AND TECHNIQUES TO EMPLOY FOR DATA COMPRESSION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-735 618 9/2 19/5
LOGICON INC SAN PEDRO CALIF

THE ADVANCED TARGETING STUDY. PHASE IF. VOLUME V. SPACE PROGRAMMING LANGUAGE (MARK II) COMPILER. PART A. PROGRAM DESCRIPTION. (U)

DESCRIPTIVE NOTE: FINAL REPT. MAR 70-JUN 71. AUG 71 636P KAYFES, RICHARD E. INIELSEN. WILLIAM C. IWALKER, BRUCE W. I
REPT. NO. CS-7140-R0202-PT-A
CONTRACT: F04701-70-C-0057
PROJ: AF-3178
TASK: 317804
MONITOR: SAMSO TR-71-124-VOL-5-PT-A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 4. AD-516 878L. AND VOLUME 5. PART B. AD-735 619.

DESCRIPTORS: (•COMPILERS, DESIGN), (•GUIDED MISSILE COMPUTERS, COMPUTER PROGRAMS), PROGRAMMING LANGUAGES. SYNTAX. DATA STORAGE SYSTEMS (U)
IDENTIFIERS: SPL/MK2 PROGRAMMING LANGUAGE. SPITBOL PROGRAMMING LANGUAGE. COMPUTER SYSTEMS PROGRAMS. COMPUTER STORAGE MANAGEMENT (U)

THE DOCUMENT DESCRIBES THE INSTALLATION AND OPERATION OF A COMPILER FOR SPL/MARK II (SPACE PROGRAMMING LANGUAGE/MARK II). THE COMPILER PRODUCES ASSEMBLY CODE FOR THE HONEYWELL HDC-701P AEROSPACE COMPUTER. IT IS WRITTEN IN SPITBOL AND EXECUTES ON THE IBM SYSTEM/360 MODEL 65 OR COMPATIBLE SYSTEM 360/370 COMPUTER. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-735 959 9/2
HOUSTON UNIV TEX

OSSL - OPERATING SYSTEMS SIMULATON LANGUAGE. A USER'S GUIDE. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
NOV 71 163P DEWAN,PREM B. ;WYATT,JOE B. ;
REPT. NO. RS-1-71
CONTRACT: N0001 4-68-A-0151

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INSTRUCTION MANUALS), DATA PROCESSING SYSTEMS, SIMULATION, PROGRAMMING(COMPUTERS), SYSTEMS ENGINEERING, THESES (U)
IDENTIFIERS: OPERATING SYSTEMS(COMPUTERS), *SIMULATION LANGUAGES, OSSL PROGRAMMING LANGUAGE, THEMIS PROJECT, COMPUTER SYSTEMS HARDWARE, COMPUTER STORAGE MANAGEMENT, COMPUTERIZED SIMULATION (U)

THE OPERATING SYSTEMS SIMULATION LANGUAGE (OSSL) HAS BEEN DEVELOPED FOR THE STOCHASTIC REPRESENTATION AND ANALYSIS OF THE DYNAMIC INTERACTIONS OF THE COMPONENTS OF A COMPUTER SYSTEM. THE COMPONENTS WHICH CAN BE REPRESENTED INDIVIDUALLY INCLUDE HARDWARE COMPONENTS (CENTRAL PROCESSING UNITS, MEMORIES, CHANNELS, DEVICES, ETC.) AS WELL AS SOFTWARE COMPONENTS (COMPILERS, LOADERS, OPERATING SYSTEM ELEMENTS, USER PROGRAMS, ETC.) PARTICULAR EMPHASIS HAS BEEN PLACED ON A MEANINFGUL SYNTAX RELATIVE TO COMPUTER SYSTEMS AND ON MODULARITY FOR BROADENING THE SCOPE OF LANGUAGE USE. THE MODELING TECHNIQUE IS BASED ON THE PHILOSOPHY OF PARTITIONABLE COMPUTER RESOURCE ALLOCATION RELATIVE TO BOTH HARDWARE AND SOFTWARE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML:

AD-736 145 9/2 5/9
RAND CORP SANTA MONICA CALIF

THE PROBABLE STATE OF COMPUTER TECHNOLOGY BY 1980, WITH SOME IMPLICATIONS FOR EDUCATION. (U)

SEP 71 11P BLACKWELL, F. W. :
REPT. NO. P-4693

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTERS, *EDUCATION), PREDICTIONS, INPUT-OUTPUT DEVICES, PROGRAMMING LANGUAGES, TIME SHARING, COMMUNICATION SYSTEMS, NETWORKS (U)
IDENTIFIERS: TECHNOLOGY (U)

TOPICS INCLUDE: LARGE COMPUTERS; MINICOMPUTERS; TERMINALS; PROGRAMMING LANGUAGES; APPLICATIONS; TIME-SHARING; COMMUNICATIONS; COMPUTER NETWORKS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-736 183 9/2
NAVAL RESEARCH LAB WASHINGTON D C

SOFTWARE SIMULATION OF AN ASSOCIATIVE PROCESSOR. (U)

DESCRIPTIVE NOTE: INTERIM REPT.,
DEC 71 33P SHORE, JOHN E. ;
REPT. NO. NRL-7351
PROJ: NRL-R06-41, WF08-151-702

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, SIMULATION), COMPUTER PROGRAMS, PROGRAMMING LANGUAGES, INSTRUCTION MANUALS (U)
IDENTIFIERS: FORTRAN, ASSOCIATIVE STORAGE, SIMULATION LANGUAGES, APC/AP PROGRAMMING LANGUAGES, SIMULATION ROUTINES (U)

A SOFTWARE SIMULATION OF AN ASSOCIATIVE PROCESSOR (AP) HAS BEEN DEVELOPED IN FORTRAN AS A TOOL FOR USE IN SOME RESEARCH PROJECTS AT NRL. THE PARTICULAR AP DESIGN BEING SIMULATED IS THAT DESCRIBED IN NRL REPORT 7348, A DESIGN ORIENTED TOWARDS THE REQUIREMENTS OF THE ADVANCED AVIONIC DIGITAL COMPUTER (AADC) UNDER DEVELOPMENT BY THE NAVAL AIR SYSTEMS COMMAND. THE SIMULATED AP IS DRIVEN BY A SIMULATED ASSOCIATIVE PROCESSOR CONTROLLER (APC). THE APC IS A SIMPLE, SEQUENTIAL COMPUTER WITH AN INSTRUCTION MEMORY, A DATA MEMORY, AN ARITHMETIC AND CONTROL SECTION, AND A SET OF SPECIAL, AP ASSOCIATED REGISTERS. THE ENTIRE AP/APC SIMULATION IS AT THE BIT LEVEL WITH THE EXCEPTION OF THE APC INSTRUCTION MEMORY, WHICH CONTAINS A NMEMONIC APC CODE WRITTEN BY THE USER. IN THIS REPORT THE OVERALL SIMULATION IS DESCRIBED AND INSTRUCTIONS FOR ITS USE ARE GIVEN. A COMPLETE EXAMPLE IS INCLUDED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-736 245 9/2 5/2
NATIONAL SECURITY AGENCY FORT MEADE MD

PROCEEDINGS OF INVITATIONAL WORKSHOP ON NETWORK OF COMPUTERS (NOC-69)(2ND) HELD AT COLLEGE PARK, MARYLAND, ON 20-22 OCTOBER 1969. (U)

OCT 70 178P

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *SYMPOSIA), (*INFORMATION RETRIEVAL, DATA PROCESSING SYSTEMS), NETWORKS, DATA STORAGE SYSTEMS, MANAGEMENT ENGINEERING, TIME SHARING (U)
IDENTIFIERS: DATA MANAGEMENT, *COMPUTER NETWORKS (U)

!CONTENTS: TECHNOLOGY FOR NETWORK LANGUAGES! PROGRAM TRANSFERABILITY! INFORMATION STORAGE AND RETRIEVAL SYSTEMS! NETWORK LANGUAGES! PHILOSOPHICAL ASSESSMENT--THE DISCREPANCY BETWEEN PAST GOALS AND PERFORMANCE! THE BROAD IMPLICATIONS OF NETWORK OPERATION AND DATA TRANSFERABILITY! PREPARING FOR THE FUTURE--A CHALLENGE TO MANAGEMENT. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-736 944 9/2
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

TELE-CODER: A SYSTEM FOR CODING AND DECODING PROGRAMMING LANGUAGES FOR USE WITH A PUSH BUTTON TELEPHONE. (U)

DESCRIPTIVE NOTE: MASTER'S THESIS.
SEP 71 62P MCKAY, JOHN NORMAN , JR.

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, CODING), (*INPUT-OUTPUT DEVICES, TELEPHONE EQUIPMENT), DECODING, TIME SHARING, COMPILERS, DATA PROCESSING SYSTEMS, REMOTE CONTROL SYSTEMS, SYNTAX, CONTEXT FREE GRAMMARS, THESES (U)
IDENTIFIERS: PUSHBUTTON TELEPHONES, DATA PROCESSING TERMINALS (U)

THE PUSH BUTTON TELEPHONE HAS BEEN EMPLOYED IN MANY SYSTEMS AS A COMPUTER TERMINAL WITH A VERY RESTRICTED CAPABILITY AND IN AT LEAST ONE INSTANCE AS A COMPUTER TERMINAL FOR A GENERAL PURPOSE PROGRAMMING LANGUAGE. THE THESIS DISCUSSES THE INPUT, OUTPUT, CODING, AND DECODING PROBLEMS WHEN CONSIDERING A GENERAL PURPOSE PROGRAMMING LANGUAGE FOR USE WITH A PUSH BUTTON TELEPHONE. INCLUDED IS A GENERAL DISCUSSION OF A SYSTEM THAT WOULD USE A SYNTACTIC ANALYSIS AND THE CONTEXT OF A PROGRAMMING LANGUAGE TO PRODUCE A CODE FOR USE WITH A PUSH BUTTON TELEPHONE. THE OUTPUT FROM THIS ANALYSIS WOULD BE USED TO BUILD A TABLE-DRIVEN TRANSLATOR TO DECODE THE LANGUAGE. AN EXAMPLE OF SUCH A SYSTEM IS INCLUDED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-736 590 9/2
MOORE SCHOOL OF ELECTRICAL ENGINEERING PHILADELPHIA PA

DESIGN OF THE DATA DESCRIPTION LANGUAGE PROCESSOR. (U)

DESCRIPTIVE NOTE: ANNUAL REPT.,
DEC 71 213P FRENCH,ANDREW ;RAMIREZ,JESUS A. ;SOLOW,HAROLD ;PRYWES,N. S. ;
REPT. NO. 72-19
CONTRACT: N00014-67-A-0216-0007
PROJ: NR-049-272

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTER PROGRAMS, DESIGN), PROGRAMMING LANGUAGES, SYNTAX, COMPILERS, DATA PROCESSING SYSTEMS (U)
IDENTIFIERS: DDL PROGRAMMING LANGUAGE, SAP COMPUTER PROGRAM, CGP COMPUTER PROGRAM, TRANSLATOR ROUTINES, INTERPRETER ROUTINES (U)

THE DATA DESCRIPTION LANGUAGE (DDL) IS A LANGUAGE FOR DESCRIBING THE STRUCTURE OF DATA, AND EXPRESSING TRANSFORMATIONS THAT ARE TO BE PERFORMED ON THAT DATA. THE DDL PROCESSOR IS A SET OF COMPUTER PROGRAMS WHICH INTERPRETS DDL STATEMENTS AND GENERATES A COMPUTER PROGRAM TO PERFORM THE SPECIFIED TRANSFORMATIONS. TOGETHER THE DDL AND ITS PROCESSOR PROVIDE A UTILITY WHICH CAN BE USED TO PERFORM JOBS SUCH AS CREATING NEW DATA BASES, REORGANIZING OR EXTRACTING DATA FROM EXISTING DATA BASES, MOVING DATA TO DIFFERENT STORAGE DEVICES, INTERFACING FILES BETWEEN DIFFERENT PROGRAMMING LANGUAGES, OR BETWEEN DIFFERENT OPERATING SYSTEMS. THIS REPORT DOCUMENTS THE DESIGN OF THE DDL PROCESSOR. SPECIAL FEATURES OF THE DESIGN INCLUDE THE USE OF SPECIAL PURPOSE INTERNAL LANGUAGES, COMPILER-COMPILER TECHNIQUES, BOOTSTRAPPING METHODS, AND A DESCRIPTOR TREE WHICH AIDS IN THE PARSING OF INPUT DATA. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-736 827 9/2
AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

DIGITAL LOGIC SIMULATOR. (U)

DESCRIPTIVE NOTE: MASTER'S THESIS,
DEC 71 160P NIEDERHAUSER, JOHN R. ;
REPT. NO. GE/MA/72-1

UNCLASSIFIED REPORT

DESCRIPTORS: (*LOGIC CIRCUITS, SIMULATION), (*COMPUTER PROGRAMS, INSTRUCTION MANUALS), TEST METHODS, PROGRAMMING LANGUAGES, DIGITAL COMPUTERS, THESES (U)
IDENTIFIERS: DLS COMPUTER PROGRAM, *SIMULATOR ROUTINES, SIMULATION LANGUAGES, DIGITAL SIMULATION, COMPUTER AIDED DESIGN, DIGITAL LOGIC SIMULATORS (U)

DIGITAL LOGIC SIMULATOR (DLS) IS A CDC 6600 COMPUTER PROGRAM WHICH SIMULATES SYNCHRONOUS AND ASYNCHRONOUS NETWORKS OF DIGITAL LOGIC ELEMENTS. IT IS USED AT AIR FORCE INSTITUTE OF TECHNOLOGY TO VERIFY DIGITAL LOGIC DESIGNS. DLS USES A STATE VARIABLE MODEL WHICH ASSOCIATES TIME DELAYS WITH ALL ELEMENTS. THUS, THE EFFECTS OF PROPAGATION DELAYS ON CIRCUIT BEHAVIOR CAN BE ANALYZED. DLS HAS FOUR OPERATION MODES WHICH ALLOW THE USER TO TEST CIRCUITS AT VARIOUS LEVELS OF COMPLEXITY. A COMPLETE USERS MANUAL IS INCLUDED IN THE THESIS WHICH DESCRIBES THE DETAILED FEATURES, CAPABILITIES, AND LANGUAGE SPECIFICATIONS FOR DLS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-737 045 9/2
NATIONAL MILITARY COMMAND SYSTEM SUPPORT CENTER WASHINGTON D C

NATIONAL MILITARY COMMAND SYSTEM INFORMATION PROCESSING SYSTEM 360 FORMATTED FILE SYSTEM (NIPS 360 FFS). PROGRAMMING SPECIFICATIONS MANUAL. VOLUME 1. INTRODUCTION. (U)

DESCRIPTIVE NOTE: COMPUTER SYSTEMS MANUAL.
SEP 71 41P STALLARD, JOHN M. ;
REPT. NO. NMCSSC-CSM-PSM-15-68-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2. AD-737 046.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, DEPARTMENT OF DEFENSE), (*PROGRAMMING(COMPUTERS), INSTRUCTION MANUALS), INFORMATION RETRIEVAL, DATA TRANSMISSION SYSTEMS, PROGRAMMING LANGUAGES (U)
IDENTIFIERS: NIPS(NMCS INFORMATION PROCESSING SYSTEM), NMCS INFORMATION PROCESSING SYSTEM, NATIONAL MILITARY COMMAND SYSTEM, RASP(RETRIEVAL AND SORT PROCESSOR), RETRIEVAL AND SORT PROCESSOR, OP(OUTPUT PROCESSOR), OUTPUT PROCESSOR, TP(TERMINAL PROCESSING), TERMINAL PROCESSING, TELEPROCESSING, UTILITY ROUTINES, QUIP(QUICK INQUIRY PROCESSOR), DATA STRUCTURES, COMPUTER STORAGE MANAGEMENT, FILE STRUCTURES (U)

THE DOCUMENT CONSTITUTES VOLUME I OF THE PROGRAMMING SPECIFICATIONS MANUAL (PSM) FOR THE NMCS INFORMATION PROCESSING SYSTEM, 360 FORMATTED FILE SYSTEM (NIPS 360 FFS). THE PSM IS A SEVEN VOLUME SERIES WHICH SERVES AS THE PRIMARY BASIS FOR PROGRAM MAINTENANCE AND SUBSEQUENT DEVELOPMENT EFFORTS. EACH VOLUME (OR PART, IF PHYSICALLY SUBDIVIDED) HAS A SUPPLEMENT CONTAINING THE COMPANION FLOWCHARTS FOR THE PROGRAMMING ELEMENTS CONTAINED IN THAT VOLUME OR PART. THIS SPECIFIC VOLUME IS THE INTRODUCTION TO THE PSM. IT CONTAINS GENERAL INFORMATION CONCERNING THE NIPS 360 FFS ORGANIZATION, ITS PROGRAMMING PHILOSOPHY, ITS COMPUTER CONFIGURATION, ITS PROGRAMMING LANGUAGES, AND THE DOCUMENTATION SYSTEM USED THROUGHOUT THE REMAINING VOLUMES OF THE PSM. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-737 056 9/2
NATIONAL MILITARY COMMAND SYSTEM SUPPORT CENTER WASHINGTON D C

NATIONAL MILITARY COMMAND SYSTEM INFORMATION PROCESSING SYSTEM 360 FORMATTED FILE SYSTEM (NIPS 360 FFS). PROGRAMMING SPECIFICATIONS MANUAL. VOLUME III. FILE MAINTENANCE (FM). PART V. NEW FILE LANGUAGE (NFL). (U)

DESCRIPTIVE NOTE: COMPUTER SYSTEMS MANUAL.
SEP 71 114P
REPT. NO. NMCSSC-CSM-PSM-15-68-VOL-3-PT-5

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 3. PART 4. SUPPLEMENT. AD-737 055 AND VOLUME 3. PART 5. SUPPLEMENT. AD-737 057.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, DEPARTMENT OF DEFENSE). (*PROGRAMMING(COMPUTERS). INSTRUCTION MANUALS). INFORMATION RETRIEVAL. PROGRAMMING LANGUAGES. MAINTENANCE. OPERATION (U)
IDENTIFIERS: NIPS(NMCS INFORMATION PROCESSING SYSTEM). NMCS INFORMATION PROCESSING SYSTEM. NATIONAL MILITARY COMMAND SYSTEM. FILE MAINTENANCE (U)

THE DOCUMENT CONSTITUTES VOLUME III. PART V. OF THE PROGRAMMING SPECIFICATIONS MANUAL (PSM) FOR THE NMCS INFORMATION PROCESSING SYSTEM. 360 FORMATTED FILE SYSTEM (NIPS 360 FFS). THIS DOCUMENT CONTAINS DETAILED PROGRAMMING INFORMATION ON THE FILE MAINTENANCE NEW FILE LANGUAGE (NFL). (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-737 057 9/2
NATIONAL MILITARY COMMAND SYSTEM SUPPORT CENTER WASHINGTON D C

NATIONAL MILITARY COMMAND SYSTEM INFORMATION PROCESSING SYSTEM 360 FORMATTED FILE SYSTEM (NIPS 360 FFS). PROGRAMMING SPECIFICATIONS MANUAL. VOLUME III. FILE MAINTENANCE (FM). PART V. NEW FILE LANGUAGE (NFL). PART V SUPPLEMENT. FLOWCHARTS. (U)

DESCRIPTIVE NOTE: COMPUTER SYSTEMS MANUAL.
SEP 71 95P
REPT. NO. NMSSC-CSM-PSM-15-68-VOL-3-PT-5-S

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 3, PART 5, AD-737 056 AND VOLUME 4, PART 1, AD-737 058.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, DEPARTMENT OF DEFENSE), (*PROGRAMMING(COMPUTERS), INSTRUCTION MANUALS), FLOW CHARTING, INFORMATION RETRIEVAL, PROGRAMMING LANGUAGES, MAINTENANCE (U)
IDENTIFIERS: NIPS(NMCS INFORMATION PROCESSING SYSTEM), NMCS INFORMATION PROCESSING SYSTEM, NATIONAL MILITARY COMMAND SYSTEM, FILE MAINTENANCE (U)

THE DOCUMENT CONSTITUTES VOLUME III, PART V, OF THE PROGRAMMING SPECIFICATIONS MANUAL (PSM) FOR THE NMCS INFORMATION PROCESSING SYSTEM, 360 FORMATTED FILE SYSTEM (NIPS 360 FFS). THIS DOCUMENT CONTAINS DETAILED PROGRAMMING INFORMATION ON THE FILE MAINTENANCE NEW FILE LANGUAGE (NFL). FLOWCHARTS FOR THE FILE MAINTENANCE COMPONENT ARE CONTAINED IN THIS VOLUME. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-737 325 9/2
RAND CORP SANTA MONICA CALIF

EXPERIENCE WITH THE EXTENDABLE COMPUTER SYSTEM SIMULATOR. (U)

DEC 70 35P KOSY,D. W. 1
REPT. NO. R-560-NASA/PR
CONTRACT: F44620-67-C-0045, NAS-12-21-44

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING LANGUAGES, DESIGN); DATA PROCESSING SYSTEMS, SIMULATION, MULTIPLE OPERATION (U)
IDENTIFIERS: ECSS(EXTENDABLE COMPUTER SYSTEM SIMULATOR), EXTENDABLE COMPUTER SYSTEM SIMULATOR, ECSS PROGRAMMING LANGUAGE, MULTIPROGRAMMING, *SIMULATION LANGUAGES (U)

A PROTOTYPE VERSION OF THE EXTENDABLE COMPUTER SYSTEM SIMULATOR (ECSS) HAS BEEN IMPLEMENTED TO AID IN CONSTRUCTING SIMULATION MODELS OF COMPUTER SYSTEMS. A SPECIALIZED LANGUAGE IS USED TO DESCRIBE HARDWARE, SOFTWARE, AND SYSTEM LOAD. A SERVICE-ROUTINE PACKAGE HANDLES MANY OF THE HOUSEKEEPING DETAILS OF MODEL CONTROL. THE FULL POWER OF SIMSCRIPT II IS ALSO AVAILABLE FOR EXTENDING ECSS CAPABILITIES. ADVANTAGES OF ECSS OVER OTHER LANGUAGES INCLUDE ITS NATURAL, ENGLISH-LIKE INPUT FORMAT, PROVISIONS FOR COMPACT DESCRIPTION OF COMMON COMPUTING SYSTEM ELEMENTS AND OPERATIONS, FLEXIBILITY, EXTENDABILITY, MODIFIABILITY, AND PROVISIONS FOR ECONOMICAL SIMULATION RERUNS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML:

AD-737 563 9/2
CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER SCIENCE

COMPUTER SCIENCE RESEARCH REVIEW 1970-71. (U)

DESCRIPTIVE NOTE: ANNUAL REPT.,
AUG 71 68p MORAN,TOM :
CONTRACT: F44620-70-C-0107, NSF-GP-7064
PROJ: ARPA ORDER-827
MONITOR: AFOSR TR-72-0462

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED AUG 69, AD-711 407.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, REVIEWS), PROGRAMMING(COMPUTERS), COMPUTER LOGIC, CONTROL SEQUENCES, PROGRAMMING LANGUAGES (U)
IDENTIFIERS: BLISS PROGRAMMING LANGUAGE, DATA STRUCTURES, OPERATING SYSTEMS(COMPUTERS) (U)

THIS IS THE ANNUAL REPORT PUBLISHED BY THE DEPT OF COMPUTER SCIENCE, CARNEGIE-MELLON UNIVERSITY, PITTSBURGH, PENN. THE REPORTING PERIOD IS FROM 1970-1971. THE SERIES OF PAPERS INCLUDES A BRIEF PRIMER ON RESOLUTION PROOF PROCEDURES BY DONALD W. LOVELAND, CONTROL STRUCTURES BY DAVID A. FISHER, BLISS: A LANGUAGE FOR PROGRAMMING SYSTEMS BY WILLIAM A. WULF AND THE KERNAL APPROACH TO BUILDING SOFTWARE SYSTEMS BY ALLEN NEWELL, PETER FREEMAN, DONALD MCCRACKEN, AND GEORGE ROBERTSON. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-737 605 9/2 17/9
ARMY MISSILE COMMAND REDSTONE ARSENAL ALA GUIDANCE AND CONTROL DIRECTORATE

COMPUTER EVALUATION TECHNIQUES. (U)

JAN 72 229P COPELAND, DONALD E. ;
REPT. NO. RG-TR-72-3

UNCLASSIFIED REPORT

DESCRIPTORS: (*DIGITAL COMPUTERS, SIMULATION), (*DATA PROCESSING SYSTEMS, AIR DEFENSE COMMAND), REAL TIME, TIME SHARING, RADAR TRACKING, TARGET ACQUISITION, DEPLOYMENT, PROGRAMMING LANGUAGES, COMPUTER PROGRAMS (U)
IDENTIFIERS: DIGITAL SIMULATION, SIMULATION LANGUAGES, COMPUTER SYSTEMS HARDWARE, COMPUTER SYSTEMS PROGRAMS (U)

PROBLEMS ASSOCIATED WITH THE EVALUATION OF PERFORMANCE OF AIR DEFENSE SYSTEM COMPUTERS ARE REVIEWED AND THE BASIS FOR USE OF DIGITAL SIMULATION MODELING IN THE EVALUATION OF THIS CLASS OF COMPUTERS IS ESTABLISHED. DECISIONS ASSOCIATED WITH THE DESIGN OF A SIMULATION MODEL ARE DISCUSSED AND THE DESIGN OF A DISCRETE TIME SIMULATION MODEL OF AN AIR DEFENSE COMPUTER SYSTEM IS DESCRIBED AND ANALYZED. SPECIFIC SIMULATION RESULTS SHOW THE PROPOSED COMPUTER SYSTEM TO BE SATISFACTORY, GENERAL SIMULATION RESULTS SHOW THE MODELING STRUCTURE TO BE WELL SUITED TO AIR DEFENSE SYSTEM EVALUATION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0ML1

AD-738 058 9/2
RAND CORP SANTA MONICA CALIF

A SELECTIVE BIBLIOGRAPHY OF COMPUTER GRAPHICS. (U)

APR 71 35P ANDERSON,R. H. ;
REPT. NO. P-4629

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), GRAPHICS), (*BIBLIOGRAPHIES, PROGRAMMING(COMPUTERS)), DATA PROCESSING SYSTEMS, PROGRAMMING LANGUAGES, LINGUISTICS, PATTERN RECOGNITION, MATHEMATICAL MODELS, ARTIFICIAL INTELLIGENCE, DISPLAY SYSTEMS, COMPUTER STORAGE DEVICES, SIMULATION (U)
IDENTIFIERS: *COMPUTER GRAPHICS, *INTERACTIVE COMPUTER GRAPHICS, COMPUTER AIDED DESIGN, AUTOMATA THEORY, COMPUTERIZED SIMULATION (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-738 368 9/2
STANFORD UNIV CALIF DEPT OF COMPUTER SCIENCE

CORRECTNESS OF TWO COMPILERS FOR A LISP SUBSET. (U)

OCT 71 43P LONDON, RALPH L.
REPT. NO. CS-240, AIM-151
CONTRACT: SD-183, NSR-05-020-500

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON STANFORD ARTIFICIAL INTELLIGENCE PROJECT.

DESCRIPTORS: (*COMPILERS, CORRECTIONS), PROGRAMMING LANGUAGES, CODING, SHIFT REGISTERS, RECURSIVE FUNCTIONS, THEOREMS (U)
IDENTIFIERS: LISP PROGRAMMING LANGUAGE, PDP-10 COMPUTERS (U)

USING MAINLY STRUCTURAL INDUCTION, PROOFS OF CORRECTNESS OF EACH OF TWO RUNNING LISP COMPILERS FOR THE PDP-10 COMPUTER ARE GIVEN. INDLUDED ARE THE RATIONALE FOR PRESENTING THESE PROOFS, A DISCUSSION OF THE PROOFS, AND THE CHANGES NEEDED TO THE SECOND COMPILER TO COMPLETE ITS PROOF. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0ML1

AD-739 258 6/2 9/2
TECHNOLOGY SERVICE CORP SANTA MONICA CALIF

STRUCTURAL LANGUAGES AND BIOMEDICAL SIGNAL ANALYSIS USING INTERACTIVE GRAPHICS. (U)

MAR 72 9P MEISEL,W. S. ;COLLINS,D. C. ;

CONTRACT: F44620-71-C-0093
PROJ: AF-9749
MONITOR: AFOSR TR-72-0616

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT SAN DIEGO BIOMEDICAL SYMPOSIUM, 2-4 FEB 72.

DESCRIPTORS: (*ELECTROPHYSIOLOGY, DATA PROCESSING SYSTEMS), (*PROGRAMMING(COMPUTERS), GRAPHICS), ANALYSIS, PROGRAMMING LANGUAGES, SPECTRUM ANALYZERS, PATTERN RECOGNITION (U)
IDENTIFIERS: SIGNAL PROCESSING, INTERACTIVE COMPUTER GRAPHICS, COMPUTER GRAPHICS, FORTRAN (U)

THE ANALYSIS OF BIOLOGICAL WAVEFORMS BY COMPUTER OR BY SPECIAL-PURPOSE HARDWARE CAN REDUCE THE BURDEN ON TRAINED MEDICAL MANPOWER, MAKE MASS SCREENING OF A POPULATION MORE TENABLE, AND ALLOWS THE AUTOMATIC ANALYSIS OF LARGE QUANTITIES OF RESEARCH DATA. WAVEFORMS GENERATED IN ELECTROCARDIOGRAPHY, PHONOCARDIOGRAPHY, VECTORCARDIOGRAPHY, CARDIAC OUTPUT RECORDING, OXYGEN CONSUMPTION RECORDING, ELECTROENCEPHALOGRAPHY, ELECTROMYOGRAPHY, AND IN SIMILAR APPLICATIONS ARE CANDIDATES FOR ANALYSIS. A CHARACTERISTIC OF MANY BIOMEDICAL WAVEFORMS IN SUCH APPLICATIONS IS THAT MANY OF THE FEATURES BY WHICH CLASSES OF WAVEFORMS, E.G., ABNORMAL VS. NORMAL EKG'S, ARE DISTINGUISHED, ARE GENERALLY EXPRESSED BY FUZZY DESCRIPTIONS OF STRUCTURAL DETAILS; IN EKG ANALYSIS, ONE HEARS REFERENCE TO, FOR EXAMPLE 'A DEPRESSED S-T SEGMENT,' 'AN INVERTED T WAVE,' 'INCREASED DURATION OF THE QRS INTERVAL,' 'LATE ONSET OF THE INTRINSICOID DEFLECTION.' IT IS THE INTENT OF THIS PAPER TO DESCRIBE A GENERALIZED APPROACH TO OBTAINING A QUANTITATIVE MEASURE OF THE DEGREE OF EXISTENCE OF SUCH A CHARACTERISTIC IN A GIVEN WAVEFORM. SUCH MEASURES HAVE A CLEAR INTERPRETATION AND CAN BE USED IN A HEURISTIC OR LINGUISTIC PROGRAM; THEY ARE CONTINUOUS BY 'CONTINUOUSLY' MEASURED FEATURES WHICH CAN BE USED ALONE OR IN COMBINATION WITH MORE ABSTRACT FEATURES IN STATISTICAL PATTERN RECOGNITION ALGORITHMS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-740 101 17/2 9/2
YALE UNIV NEW HAVEN CONN DEPT OF ADMINISTRATIVE SCIENCES

INTERACTIVE MAN-MACHINE COMMUNICATION. (U)

DESCRIPTIVE NOTE: ANNUAL REPT. 1 FEB 71-31 JAN 72, MAR 72 145P CARLISLE, JAMES H. ;
REPT. NO. TR-51
CONTRACT: N000I4-67-A-0097-0010
PROJ: NR-049-293

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO ANNUAL REPT. DATED MAR 71. AD-722 336.

DESCRIPTORS: (*DECISION MAKING, MAN-MACHINE SYSTEMS), (*COMMUNICATION SYSTEMS, COMPUTERS), INTERACTIONS, EXPERIMENTAL DESIGN, PROGRAMMING LANGUAGES, MEDICAL RESEARCH, DATA PROCESSING SYSTEMS, HANDBOOKS (U)
IDENTIFIERS: *MANAGEMENT INFORMATION SYSTEMS, MAN COMPUTER COMMUNICATION, MAN COMPUTER INTERACTIONS, AUTOGRP COMPUTER PROGRAM, HELP PROGRAMMING LANGUAGE (U)

A FRAMEWORK FOR THE DESIGN AND INTERPRETATION OF EXPERIMENTS IN MAN-COMPUTER INTERACTION IS DESCRIBED. THE RESULTS OF EXPERIMENTS UTILIZING THE SYSTEM-USER BEHAVIRO MONITORING CAPABILITY DEVELOPED UNDER THIS RESEARCH ARE GIVEN, AND SPECIFIC DESIGN GUIDELINES PRESENTED. AUTOGRP, AN AUTOMATED SYSTEM FOR CLUSTERING DATA TO PRODUCE DECISION INFORMATION WAS USED IN THE CONTEXT OF PROBLEMS IN MEDICAL DECISION-MAKING IN THE EXPERIMENTS. A TUTORIAL LANGUAGE, HELP, WAS DEVELOPED TO AID IN THE EXPERIMENTS AND IS DESCRIBED IN THE REPORT. THIS LANGUAGE CAN BE USED TO DEVELOP TUTORIAL ASSISTANCE FOR ANY INTERACTIVE USE OF COMPUTERS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-741 263 9/2
COMPUTER CORP OF AMERICA CAMBRIDGE MASS

NETWORK DATA HANDLING SYSTEM,
(DATACOMPUTER PROJECT), (U)

DESCRIPTIVE NOTE: SEMIANNUAL TECHNICAL REPT.,
MAR 72 107P MARILL,THOMAS ;CUREWITZ,
KENNETH E. ;
CONTRACT: DAHC04-71-C-0011, ARPA ORDER-1731

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 1 SEP 71,
AD-730 724.

DESCRIPTORS: (•DATA PROCESSING SYSTEMS, NETWORKS),
(•PROGRAMMING LANGUAGES, DESIGN), (•DATA STORAGE
SYSTEMS, PERFORMANCE(ENGINEERING)), DATA
TRANSMISSION SYSTEMS, INFORMATION RETRIEVAL, INPUT-
OUTPUT DEVICES, TIME STUDIES, INTERFACES (U)
IDENTIFIERS: •COMPUTER NETWORKS, COMPUTER STORAGE
MANAGEMENT, DATA COMPUTER PROJECT (U)

THE PURPOSE OF THE PROJECT IS TO ADVANCE THAT
TECHNOLOGY ASSOCIATED WITH DATA HANDLING IN COMPUTER
NETWORKS. TWO PAPERS ARE INCLUDED IN THE DOCUMENT.
THE FIRST PAPER DISCUSSES THE DATALANGUAGE OF THE
DATACOMPUTER SYSTEM. THIS LANGUAGE IS THE NOTATION
FOR INTERACTING WITH THE DATACOMPUTER AND DEFINES THE
CAPABILITIES OF THAT SYSTEM. THE SECOND PAPER
DISCUSSES THE STORAGE SPACE REQUIRED FOR DATACOMPUTER
FILES AND THE TIME REQUIRED TO EXECUTE REQUESTS ON
THE DATACOMPUTER. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-741 837 9/2 16/4
CIRAD CLAREMONT CALIF

SOFTWARE TECHNOLOGY STUDY FOR ADVANCED GUIDANCE COMPUTER ARCHITECTURES. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 FEB 71-15 FEB 72,
MAR 72 437P WERSAN, STEPHEN J. ;COLEN, PAUL ;SAYLOR, ROY ;VEIGEL, LARKIN ;RICHARDS, ELAIN ;
REPT. NO. CIRAD-WS-10196-1
CONTRACT: F04701-71-C-0183
PROJ: AF-672A
MONITOR: SAMSO TR-72-86

UNCLASSIFIED REPORT

DESCRIPTORS: (*GUIDED MISSILE COMPUTERS, *PROGRAMMING(COMPUTERS)), PROGRAMMING LANGUAGES, COMPILERS, INPUT-OUTPUT DEVICES, SHIFT REGISTERS, SYNTAX, MATHEMATICAL MODELS, SIMULATION (U)
IDENTIFIERS: COMPUTERIZED SIMULATION, FORTRAN (U)

THE OBJECTIVE OF THE STUDY IS TO VALIDATE THE DESIGN OF AN ADVANCED GUIDANCE COMPUTER ARCHITECTURE DEVELOPED UNDER THE ARCHITECTURAL STUDY FOR ADVANCED GUIDANCE COMPUTERS. THE ARCHITECTURE WAS DESIGNED TO PERMIT THE EFFECTIVE USE OF HIGH-ORDER PROGRAMMING LANGUAGES IN THE DEFINITION AND IMPLEMENTATION OF ADVANCED BALLISTIC MISSILE MISSIONS. THE METHOD USED TO VALIDATE THE AGC ARCHITECTURE WAS THROUGH SYSTEM SIMULATION. THE DEVELOPED SIMULATION SOFTWARE CONSISTED OF: (1) AN SPL/MK III COMPILER OPERATING ON THE AEROSPACE CORPORATION'S CDC 6600 WHICH GENERATED AGC ASSEMBLY LANGUAGE LEFT HAND POLISH STRING CODE: (2) AN AGC SYMBOLIC ASSEMBLY SYSTEM, AND (3) AN AGC ARCHITECTURE FUNCTIONAL SIMULATOR. THE SPL/MK III COMPILER WAS DEVELOPED UTILIZING THE SYSTEM DEVELOPMENT CORPORATION (SDC) SPLIT META COMPILER, AND THE AGC ASSEMBLER AND SIMULATOR WERE PROGRAMMED IN SPL/MK IV/ 6600 PROTOTYPE COMPILER. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-743 014 9/2
CIRAD CLAREMONT CALIF

SPACE PROGRAMMING LANGUAGE MACHINE ARCHITECTURE STUDY. VOLUME I. (U)

DESCRIPTIVE NOTE: FINAL REPT. FEB 71-APR 72,
APR 72 275P GREBERT,A. ;GERBSTADT,F. ;
COLEN,P. ;
REPT. NO. CIRAD-RS-10300-2-VOL-1
CONTRACT: F04701-71-C-0200
PROJ: AF-672A
MONITOR: SAMSO TR-72-117-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-743 015.
PREPARED IN COOPERATION WITH SIA, INC., GLENMORE,
PA. 19343.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, SEMANTICS),
COMPILERS, SPECIAL PURPOSE COMPUTERS, COMPUTER
LOGIC, RECURSIVE FUNCTIONS, INPUT-OUTPUT DEVICES,
SPACECRAFT (U)
IDENTIFIERS: *SPACE PROGRAMMING LANGUAGE, BOOLEAN
FUNCTIONS, TOY PROGRAMMING LANGUAGE (U)

THE REPORT PRESENTS THE RESULTS OF THE SPACE PROGRAMMING LANGUAGE MACHINE (SPLM) ARCHITECTURE STUDY. THE PRINCIPLE OBJECTIVE OF THIS WORK WAS TO DEVELOP A COMPUTER ARCHITECTURE FOR THE SPACE, BALLISTIC AND AVIONIC APPLICATION AREA WHICH DIRECTLY EXECUTES A HIGHER ORDER LANGUAGE. THE PRINCIPLE DOCUMENT OF THE DESIGN, THE SEMANTIC SIMULATOR: THE DESCRIPTION OF THE SPLM LANGUAGE (SPIML) AND ITS TRANSLATOR/COMPACTOR: AND THE MEMORY REDUCTION REALIZED WITH THE DESIGN ARE PRESENTED. ALL SOFTWARE FOR THIS EFFORT WAS DEVELOPED UTILIZING AN INTERACTIVE APL SYSTEM. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-825 796 9/2
INFORMATICS INC ENGLEWOOD CLIFFS N J

SOFTWARE METHODOLOGY FOR MULTI-PROCESSING SYSTEMS. (U)

DESCRIPTIVE NOTE: FINAL REPT. JUN 66-AUG 67,
JAN 68 162P BACON,FRED ;FLIGHT,ROBERT ;
REPT. NO. TR-67-669-5
CONTRACT: AF 30(602)-4252
PROJ: AF-4594
TASK: 459402
MONITOR: RADC TR-67-481

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, *TIME SHARING), (*PROGRAMMING(COMPUTERS), TIME SHARING), COMPILERS, CONTROL SYSTEMS, EFFECTIVENESS, INTERACTIONS, CODING, SYNTAX, PROGRAMMING LANGUAGES, ALGORITHMS, SCHEDULING, FLOW CHARTING (U)
IDENTIFIERS: MULTIPROCESSING, COMPUTER SOFTWARE (U)

THE STUDY WAS DIRECTED TOWARD THE GOAL OF DETERMINING HOW TO UTILIZE AND CONTROL A MULTI-PROCESSOR SYSTEM MOST EFFECTIVELY AND PRESENTS INITIAL CONSIDERATIONS, INTERRELATIONSHIPS AND A METHODOLOGY FOR APPROACHING A PROBLEM OF THIS SCOPE AND DEPTH. THE REPORT REPRESENTS AN EFFORT TO ESTABLISH: (1) A CONTEXT WITHIN WHICH CRITICAL CONSIDERATIONS IN COOPERATIVE MULTI-PROCESSING MAY BE UNDERSTOOD; (2) A METHODOLOGY FOR ANALYSIS WHICH LEADS INTO INTEGRATED CONCEPTIONS AND SOLUTIONS TO THE LANGUAGE, COMPILER, AND CONTROL PROCESSES WHICH ARE THE BASIS OF EVENTUAL MULTI-PROCESSOR SOFTWARE; (3) A CONCEPTUAL FRAMEWORK AND FIRST APPROACHES TO THE REPRESENTATION OF PROGRAM STRUCTURE SUCH THAT OPPORTUNITIES TO EXECUTE PIECES OF THE PROGRAM IN PARALLEL CAN BE DETECTED AND EFFECTED AND A METHOD OF PROGRAM PRESENTATION CAN BE DEVELOPED SUCH THAT THE REPRESENTATIVE STRUCTURE CAN BE DERIVED; AND (4) A VIEW OF PRACTICAL APPLICATIONS OF COOPERATIVE MULTI-PROCESSING IN THE STRUCTURING AND EXECUTION OF EXECUTIVE SYSTEMS, COMPILER AND USER PROGRAMS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-830 505 20/4 9/2 18/3
NAVAL ORDNANCE LAB WHITE OAK MD

OPERATING MANUAL FOR CYCLONE, A TWO-DIMENSIONAL HYDRODYNAMIC LAGRANGIAN CODE. (U)

FEB 68 56P JEN,N. ILUTZKY,M. 1
PIACES1,D. 1
REPT. NO. NOLTR-67-193

UNCLASSIFIED REPORT

DESCRIPTORS: (*HYDRODYNAMICS, *AXIALLY SYMMETRIC FLOW), (*TWO-DIMENSIONAL FLOW, *COMPUTER PROGRAMS), INSTRUCTION MANUALS, DATA PROCESSING SYSTEMS, PROGRAMMING LANGUAGES, CONTROL SEQUENCES, SUBROUTINES, GEOMETRY, INTERFACES, PUNCHED CARDS, SLIDING CONTACTS, BLAST, NUCLEAR EXPLOSIONS, NUMERICAL ANALYSIS, SHOCK WAVES, INPUT-OUTPUT DEVICES (U)
IDENTIFIERS: FORTRAN, TRANSIENT FLOW, COMPUTER ANALYSIS, MESH CONFIGURATIONS, *CYCLONE CODE, GAS DYNAMICS, IBM 7090 (U)

THE CYCLONE CODE IS A HIGH-SPEED COMPUTER PROGRAM, WRITTEN IN THE FORTRAN II LANGUAGE, WHICH SOLVES AXIALLY SYMMETRIC, TRANSIENT FLOW PROBLEMS BY THE VON NEUMANN-RICHTMYER ARTIFICIAL VISCOSITY METHOD, IN LAGRANGIAN COORDINATES. THIS REPORT FURNISHES A GENERAL DESCRIPTION OF THE CODE, INPUT-OUTPUT SPECIFICATIONS, DEFINITIONS OF VARIABLES, RESULTS FOR A SAMPLE COMPUTATION, AND A COMPLETE FORTRAN LISTING OF THE CODE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /Z0ML1

AD-853 423 9/2
BURROUGHS CORP PAOLI PA DEFENSE SPACE AND SPECIAL SYSTEMS GROUP

PARALLELISM EXPOSURE AND EXPLOITATION IN DIGITAL COMPUTING SYSTEMS. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. NO. 8, 19 JUL 68-28 FEB 69,
JUN 69 310P BINGHAM, HARVEY W. ;REIGEL, EARL W. ;
REPT. NO. TR-69-4
CONTRACT: DA-28-043-AMC-02463(E)
PROJ: DA-1-H-062101-A-327
TASK: 1-H-062101-A-32703
MONITOR: ECOM 02463-F

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO QUARTERLY REPT. NO. 7, AD-843 703.

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), MULTIPLE OPERATION), (*DIGITAL COMPUTERS, MULTIPLE OPERATION), COMPUTER PROGRAMS, DATA PROCESSING SYSTEMS, INFORMATION THEORY, ALGORITHMS, PROGRAMMING LANGUAGES, TIME SHARING, COMPUTER LOGIC, SCHEDULING (U)
IDENTIFIERS: *PARALLEL PROCESSING, *MULTIPLE PROCESSING, *MULTIPROGRAMMING (U)

TECHNIQUES ARE PRESENTED FOR THE EXPOSURE AND EXPLOITATION OF PARALLELISM WITHIN PROGRAMS. TWO ALGORITHMS, BASED ON INPUT/OUTPUT SET COMPARISONS, ARE GIVEN FOR THE AUTOMATIC DETECTION OF PARALLELISM EXTANT IN SERIALLY WRITTEN PROGRAMS. REPRESENTATION AND SEGMENTATION OF THE PARTIAL ORDER CONTROL INFORMATION RESULTING FROM PROGRAM ANALYSIS ARE DISCUSSED. LANGUAGE CONSTRUCTS ARE SUGGESTED THAT PROVIDE EXPLICIT INDICATION OF PARALLELISM AT THE TASK LEVEL (ROUTINES AND REPEAT STATEMENTS). CONCEPTS FOR EFFICIENT EXPLOITATION OF PARALLELISM ARE INVESTIGATED. A PARALLEL PROCESSING SYSTEM IS DESCRIBED AND VARIOUS RELATED SYSTEM CONSIDERATIONS ARE DISCUSSED. INFORMATION FLOW IS STUDIED IN TERMS OF MEMORY HIERARCHY AND INTER-UNIT COMMUNICATION. MOTIVATIONS FOR THE STUDY OF PARALLELISM ARE GIVEN AND SEVERAL LEVELS OF PARALLELISM ARE DEFINED. MULTIPLE COMPUTER SYSTEMS ARE EXAMINED AND COMPARED BASED ON HOMOGENEITY AND INTER-UNIT COMMUNICATION.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOHLI

AD-689 520 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

USE OF THE LIST-PROCESSING TECHNIQUE TO GENERATE A COMPILER FOR THE MINSK 22 ELECTRONIC COMPUTER. (U)

JUN 69 16P DETTRICH,ARPAD ;
REPT. NO. FTD-HT-23-284-69

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF MERES ES AUTOMATIKA (HUNGARY) V16 N6 P233-237 1968. BY D. GRANDJEAN.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, *COMPILERS), DIGITAL COMPUTERS, HUNGARY (U)
IDENTIFIERS: LISP PROGRAMMING LANGUAGE, MINSK 22 COMPUTERS, TRANSLATIONS (U)

THIS PAPER DEALS WITH THE LISP COMPILER WHICH WAS PREPARED FOR THE MINSK ELECTRONIC COMPUTER. SPECIAL ATTENTION IS FOCUSED ON THE INDEPENDENCE OF THE OBJECT LANGUAGE FROM THE COMPILER. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-860 494 15/5 9/2 13/10
MASSACHUSETTS INST OF TECH CAMBRIDGE DEPT OF NAVAL ARCHITECTURE AND MARINE ENGINEERING

COMPUTER SIMULATION OF CARGO HANDLING SYSTEMS. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 SEP 68-31 AUG 69, AUG 69 300P COOPER, JOHN B. ;FRANKEL, E. G. ;
REPT. NO. 69-9
CONTRACT: N000014-67-A-0204
PROJ: NR-276 022, MIT-DSR-70562

UNCLASSIFIED REPORT

DESCRIPTORS: (•SHIPPING(MARINE), CARGO), (•CARGO, HANDLING), (•LOGISTICS, MATHEMATICAL MODELS), CARGO SHIPS, EFFICIENCY, OPTIMIZATION, DIGITAL COMPUTERS, PROGRAMMING(COMPUTERS), COMPUTER PROGRAMS, PROGRAMMING LANGUAGES, COMPILERS, SUBROUTINES, INPUT-OUTPUT DEVICES, ERRORS, COSTS (U)
IDENTIFIERS: •COMPUTERIZED SIMULATION, •CARGO HANDLING SYSTEMS, ALLOCATION MODELS (U)

A COMPUTER LANGUAGE TOGETHER WITH A SUPPORTING SOFTWARE PACKAGE IS DEVELOPED FOR THE SIMULATION OF CARGO HANDLING SYSTEMS, SUBJECT TO VERY BROAD CONSTRAINTS, ANY CARGO HANDLING SYSTEM MAY BE MODELED USING THIS SYSTEM. THE SOFTWARE PACKAGE IS CODED IN PL/1. WHILE KNOWLEDGE OF THIS LANGUAGE IS NOT A PREREQUISITE FOR THE USE OF THIS SYSTEM, IT IS DESIRABLE IN ORDER TO UTILIZE ITS FULL POTENTIAL. THE SIMULATION SYSTEM MUST BE RUN ON AN IBM 360 COMPUTER WITH A PL/1 LEVEL (F) COMPILER AND AT LEAST 150K OF CORE STORAGE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-867 371 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF

SPACE PROGRAMMING LANGUAGE/MARK II (SPL/MK II) PROGRAMMER'S MANUAL. (U)

DESCRIPTIVE NOTE: FINAL REPT. JAN-OCT 69.
FEB 70 114P
CONTRACT: F04701-69-C-0024
MONITOR: SAMSO TR-69-421

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: CONTINUATION OF CONTRACT F04701-68-C-0135.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, INSTRUCTION MANUALS), COMPUTATIONAL LINGUISTICS, VOCABULARY, SYNTAX, SEMANTICS, COMPUTER LOGIC, CONTROL SEQUENCES, SPECIAL PURPOSE COMPUTERS, FLIGHT CONTROL SYSTEMS, SPACEBORNE (U)
IDENTIFIERS: SPACE PROGRAMMING LANGUAGE/MARK 2 (U)

THE DOCUMENT IS A REFERENCE PROGRAMMER'S MANUAL FOR SPACE PROGRAMMING LANGUAGE/MARK II (SPL/MK II), A SUBSET OF SPACE PROGRAMMING LANGUAGE/JOVIAL J6. SPL/MK II HAS BEEN IMPLEMENTED ON THE IBM 360/65 AND COMPILES CODE FOR THE IBM 360 AND UNIVAC 1824 COMPUTERS. THE MANUAL INCLUDES A DESCRIPTION OF ALL THE BASIC LANGUAGE FORMS, THEIR INTERPRETATION, NUMEROUS EXAMPLES, AND COMPILER DIAGNOSTICS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-869 051 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

DESCRIPTION OF LANGUAGE AND ALGUM TRANSLATOR FOR UMC MACHINES, (U)

JAN 70 13P LESZCZYNSKI, JERZY I
REPT. NO. FTD-HT-23-499-69
PROJ: FTD-6050202

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF POLSKA AKADEMIA NAUK. INSTYTUT MASZYN MATEMATYCZNYCH. PRACE, V3 NS P183-133 1965. BY L. MAROKUS.

DESCRIPTORS: (*PROGRAMMING LANGUAGES, ALGORITHMS), DIGITAL COMPUTERS, SYNTAX, COMPUTATIONAL LINGUISTICS, POLAND (U)
IDENTIFIERS: TRANSLATOR ROUTINES, ALGUM PROGRAMMING LANGUAGE, TRANSLATIONS (U)

THE REPORT CONTAINS A DESCRIPTION OF THE ALGUM LANGUAGE, DEVELOPED ESPECIALLY FOR VERY SMALL COMPUTERS, A BRIEF DESCRIPTION OF THE TRANSLATOR OF THAT LANGUAGE MADE FOR UMC MACHINES, AND A SUMMATION OF THE RESULTS OBTAINED IN MORE THAN A YEAR OF INTENSIVE OPERATION OF IT AT THE MATHEMATICAL CENTER. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-869 518 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

AN ALGOL TRANSLATING PROGRAM FOR THE MINSK-2 COMPUTER. (U)

APR 70 18P BUKI,PETER I
REPT. NO. FTD-HT-23-629-69
PROJ: FTD-6050202
TASK: DIA-T68-05-02

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF INFORMACIO ELEKTRONIKA (HUNGARY) V3 N4 P256-259 1968, BY D. GRANDJEAN.

DESCRIPTORS: (*DIGITAL COMPUTERS, *PROGRAMMING LANGUAGES), SYNTAX, COMPILERS, HUNGARY (U)
IDENTIFIERS: TRANSLATIONS, MINSK 2 COMPUTERS, ALGOL PROGRAMMING LANGUAGE (U)

THE TRANSLATION PROGRAM DEVELOPED FOR THE MINSK-2 DIGITAL COMPUTER SERVES TWO PURPOSES: (1) IT ENABLES THE PROGRAMMING OF THE MINSK-2 COMPUTER BY A MORE ADVANCED LANGUAGE THAN THE AUTOCODE, AND (2) IT PERMITS EXPERIENCES TO BE GAINED IN THE PREPARATION OF SYNTACTICALLY CONTROLLED TRANSLATION PROGRAMS AND IN THE UTILIZATION OF THE NEWLY DEVELOPED SIGNAL-SEQUENCE RECOGNITION TECHNIQUE. THE TRANSLATION PROGRAM, A TWO-STEP OPERATION, AND THE SIGNAL-SEQUENCE RECOGNITION METHOD WERE DESCRIBED. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOML1

AD-881 053 9/2
MICHIGAN UNIV ANN ARBOR COMPUTER CENTER

CONCOMP: RESEARCH IN CONVERSATIONAL USE OF COMPUTERS. (U)

DESCRIPTIVE NOTE: FINAL REPT.,
DEC 70 186P WESTERVELT,F. H. ;
REPT. NO. 07449-3-F
CONTRACT: DA-49-083-OSA-3050, ARPA ORDER-716
PROJ: ORA-07449

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING(COMPUTERS), GRAPHICS), (*DATA PROCESSING SYSTEMS, SPEECH RECOGNITION), INPUT-OUTPUT DEVICES, COMPUTER LOGIC, ELECTRICAL NETWORKS, COMPUTER STORAGE DEVICES, TIME SHARING, ANATOMICAL MODELS, PROGRAMMING LANGUAGES, PROBLEM SOLVING (U)
IDENTIFIERS: CONCOMP PROJECT, COMPUTER GRAPHICS, COMPUTER AIDED DESIGN, DATA STRUCTURES, MAD/1 PROGRAMMING LANGUAGE (U)

THE REPORT DESCRIBES THE FINAL RESEARCH RESULTS OF THE CONCOMP PROJECT: RESEARCH IN THE CONVERSATIONAL USE OF COMPUTERS, WHICH WAS FUNDED FROM 1965-1970. THIS RESEARCH INVOLVED THE DESIGN, DEVELOPMENT, AND TESTING OF COMPUTER PROGRAMS FOR GRAPHICAL INPUT OF PROBLEM STATEMENTS AND GRAPHICAL OUTPUT OF RESULTS FROM A COMPUTER; THE APPLICATION OF THE TECHNIQUES SO DEVELOPED TO SPEECH SYNTHESIS, SYSTEMS DESIGN RESEARCH, AND RESEARCH IN THE LOGIC OF COMPUTERS; THE STUDY, DESIGN, IMPLEMENTATION, AND TESTING OF SYSTEMS FOR DESCRIBING GRAPHICAL OPERATIONS WITHIN THE FORMAT OF PROCEDURE-ORIENTED COMPUTER PROGRAMMING LANGUAGES. ALL OF THIS WORK WAS PREDICTED ON THE AVAILABILITY OF IBM 360/67 HARDWARE AND SOFTWARE, WHEN TSS WAS UNAVAILABLE, CONCOMP UNDERTOOK TWO ADDITIONAL TASKS: (1) DEVELOPMENT OF THE CONVERSATIONAL ASPECTS OF AN OPERATING SYSTEM FOR THE CENTRAL COMPUTING FACILITIES TO SUPPORT EFFECTIVE MANMACHINE INTERACTION; (2) DEVELOPMENT OF AN EFFECTIVE HARDWARE INTERFACE FOR THE SUPPORT OF THE REMOTE TERMINAL DEVICES. (AUTHOR) (U)

CORPORATE AUTHOR - MONITORING AGENCY

•ABERDEEN RESEARCH AND DEVELOPMENT CENTER ABERDEEN PROVING GROUND MD

• • •

ARDC-TR-8
THE BRLESC II INSTRUCTION CODE.
AD-719 694

•ADMIRALTY SURFACE WEAPONS ESTABLISHMENT PORTSMOUTH (ENGLAND)

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ASWE-TR-71-15
CORAL 66 LIBRARY PROCEDURES FOR MRCSL 900 COMPUTERS.
(NSTIC-30367)
AD-729 704

•AEROSPACE CORP SAN BERNARDINO CALIF SAN BERNARDINO OPERATIONS

• • •

TR-0200(S9990)-4
J-3. PL/1 AND A DATA BASE.
(SAMSO-TR-69-25)
AD-682 305

•AEROSPACE RESEARCH LABS WRIGHT-PATTERSON AFB OHIO

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ARL-69-0064
FORTRAN M: PROGRAMMING PACKAGE FOR BAND MATRICES AND VECTORS.
AD-691 431

•AIR FORCE AERO PROPULSION LAB WRIGHT-PATTERSON AFB OHIO

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AFAPL-TR-68-27-PT-1
THE COMPILER FOR THE PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT (PLACE). PART I: PLACE LANGUAGE AND COMPILER.
AD-670 842

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AFAPL-TR-68-27-PT-2
THE COMPILER FOR THE PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT (PLACE). PART II. APPENDIXES-DETAILED COMPILER DOCUMENTATION.
AD-670 843

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AFAPL-TR-68-27-SUPPL-1
THE COMPILER FOR THE PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT (PLACE). SUPPLEMENT 1. ADAPTED 'PLACE' COMPILER FOR THE IBM TYPE 360 DIGITAL COMPUTER.
AD-685 771

•AIR FORCE CAMBRIDGE RESEARCH LABS L G HANSCOM FIELD MASS

• • •

AFCRL-68-0063
STUDY OF A COMPUTER FOR DIRECT EXECUTION OF LIST PROCESSING LANGUAGE.
AD-680 399

• • •

AFCRL-68-0319
COMPUTER PROGRAMS: INTERNAL REPRESENTATION.
AD-674 617

• • •

AFCRL-68-0472
ABSTRACT FAMILIES OF PROCESSORS.
AD-680 782

• • •

AFCRL-69-0322
CDLI. A COMPUTER DESCRIPTION LANGUAGE. PART I. THE NATURE OF THE DESCRIPTION LANGUAGE AND ORGANIZATION OF DESCRIPTIONS. PART II. KINDS OF DESCRIPTIONS OF A COMPUTING SYSTEM.
AD-693 555

• • •

AFCRL-69-0523
NATURAL COMMUNICATION WITH COMPUTERS II.
AD-700 817

• • •

AFCRL-70-0184
ON THE IMPLEMENTATION OF THE DESCRIPTIVE DATA BASE, BASED ON CDLI.
AD-709 224

• • •

AFCRL-71-0530
RESEARCH IN ON-LINE COMPUTATION.
AD-735 300

•AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF ENGINEERING

• • •

GE/MA/72-1
DIGITAL LOGIC SIMULATOR.
AD-736 827

•AIR FORCE OFFICE OF SCIENTIFIC RESEARCH ARLINGTON VA

• • •

AFOSR-68-1299
WRITEACOURSE: AN EDUCATIONAL PROGRAMMING LANGUAGE.
AD-670 524

• • •

AFOSR-68-2326
SLAMS: SIMPLIFIED LANGUAGE FOR ABSTRACT MATHEMATICAL STRUCTURES.
AD-679 603

• • •

AFOSR-69-0272TR
AUTOMATIC QUESTION-ANSWERING OF ENGLISH-LIKE QUESTIONS ABOUT ARITHMETIC.
AD-682 339

• • •

AFOSR-69-1424TR
APPLICATION OF SIMULATION TO THE GENERALIZED OPTIMIZATION OF PROCESS CONTROL SYSTEMS.
AD-688 808

• • •

AFOSR-69-1505TR
LINGUISTIC SPECIFICATION AND ANALYSIS OF CLASSES OF LINE PATTERNS.
AD-689 279

• • •

AFOSR-69-2960TR
ALGEBRAIC THEORY OF MACHINES, LANGUAGES, AND SEMIGROUPS.
AD-696 996

• • •

AFOSR-69-2978TR
A SURVEY AND AN ANNOTATED BIBLIOGRAPHY OF DATA STRUCTURES FOR COMPUTER GRAPHICS SYSTEMS.
AD-697 800

• • •

AFOSR-69-2989TR
GRIND: A LANGUAGE AND TRANSLATOR FOR COMPUTER GRAPHICS.
AD-697 806

• • •

AFOSR-70-0154TR
THE DESCRIPTION, SIMULATION, AND AUTOMATIC IMPLEMENTATION OF DIGITAL COMPUTER PROCESSORS.
AD-700 144

• • •

AFOSR-70-1564TR
MORE ON SIMULATION LANGUAGES AND DESIGN METHODOLOGY FOR COMPUTER SYSTEMS.
AD-706 808

• • •

AFOSR-70-2585TR
TOPOLOGICAL MANIPULATION OF LINE DRAWINGS USING A PATTERN DESCRIPTION LANGUAGE.
AD-714 593

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AFOSR-70-2586TR
PADEL - A PATTERN DESCRIPTION LANGUAGE.
AD-714 594

• • •

AFOSR-TR-71-0752
INFORMATION PROCESSING MODELS AND COMPUTER AIDS FOR HUMAN PERFORMANCE.
AD-711 378

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AFOSR-TR-71-0857
PDP-9 BASIC INTERPRETER.
AD-721 477

• • •

AFOSR-TR-71-1799
SURVEY OF DATA STRUCTURES FOR COMPUTER GRAPHICS SYSTEMS.
AD-725 284

• • •

AFOSR-TR-71-2159
INTERACTIVE PROGRAMMING SYSTEMS AND LANGUAGES.
AD-728 224

• • •

AFOSR-TR-71-2192
RESEARCH TOWARD ADVANCING AIR FORCE TRAINING TECHNIQUES THROUGH COMPUTER ASSISTED INSTRUCTION.

AD-724 223

• • •

AFOSR-TR-71-2376
CONVERSATIONAL PROGRAMMING - APL. AN IMPLEMENTATION IN BLISS.
AD-729 941

• • •

AFOSR-TR-71-2656
C.AI--A LISP PROCESSOR FOR C.AI.
AD-731 232

• • •

AFOSR-TR-71-2735
UNIVERSITY OF HAWAII. TIME SHARING SYSTEM.
AD-732 297

• • •

AFOSR-TR-71-2744
GRAPHIDI: A SYSTEM FOR EXPANDING DARTMOUTH BASIC TO PRODUCE GRAPHICAL DISPLAYS WITHIN A TIME-SHARING ENVIRONMENT. VOLUME I.
AD-732 207

• • •

AFOSR-TR-71-2853
A METHOD FOR BUILDING DATA MANAGEMENT PROGRAMS.
AD-732 977

• • •

AFOSR-TR-72-0462
COMPUTER SCIENCE RESEARCH REVIEW 1970-71.
AD-737 563

• • •

AFOSR-TR-72-0614
STRUCTURAL LANGUAGES AND BIOMEDICAL SIGNAL ANALYSIS USING INTERACTIVE GRAPHICS.
AD-739 258

*APPLIED LOGIC CORP PRINCETON N J

• • •

A STUDY IN PROGRAM CONVERSION.
AD-717 392

*ARMY ELECTRONICS COMMAND FORT MONMOUTH N J

• • •

ECOM-01901-30
GRAPHICAL-DATA-PROCESSING RESEARCH STUDY AND EXPERIMENTAL INVESTIGATION.
AD-670 054

• • •

ECOM-02377-4
LIST PROCESSING RESEARCH TECHNIQUES.
AD-670 967

• • •

ECOM-02463-F
PARALLELISM EXPOSURE AND EXPLOITATION IN DIGITAL COMPUTING SYSTEMS.
AD-853 529

*ARMY MISSILE COMMAND REDSTONE ARSENAL ALA GUIDANCE AND CONTROL DIRECTORATE

• • •

RG-TR-72-3
COMPUTER EVALUATION TECHNIQUES.
AD-737 606

*ARMY RESEARCH OFFICE DURHAM N C

• • •

AROD-4166.23-M
SPRINT - A PROGRAMMING LANGUAGE WITH GENERAL STRUCTURE.
AD-725 988

*BATTELLE MEMORIAL INST COLUMBUS OHIO COLUMBUS LABS

• • •

THE COMPILER FOR THE PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT (PLACE). PART II PLACE LANGUAGE AND COMPILER. (AFAPL-TR-68-27-PT-1)
AD-670 842

• • •

THE COMPILER FOR THE PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT (PLACE). PART II. APPENDIXES-DETAILED COMPILER DOCUMENTATION. (AFAPL-TR-68-27-PT-2)
AD-670 843

• • •

THE COMPILER FOR THE PROGRAMMING LANGUAGE FOR AUTOMATIC CHECKOUT EQUIPMENT (PLACE).

BOL-CAS

SUPPLEMENT 1. ADAPTED 'PLACE' COMPILER FOR THE IBM TYPE 360 DIGITAL COMPUTER.
(AFAPL-TR-68-27-SUPPL-1)
AD-685 771

•BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS

• • •

BBN-1893
NATURAL COMMUNICATION WITH COMPUTERS II.
(AFCRL-69-0523)
AD-700 817

• • •

BBN-20CA
INFORMATION PROCESSING MODELS AND COMPUTER AIDS FOR HUMAN PERFORMANCE.
(AFOSR-TR-71-0752)
AD-711 378

•BURROUGHS CORP PAOLI PA DEFENSE SPACE AND SPECIAL SYSTEMS GROUP

• • •

TR-69-4
PARALLELISM EXPOSURE AND EXPLOITATION IN DIGITAL COMPUTING SYSTEMS.
(ECOM-02463-F)
AD-853 521

•CALIFORNIA UNIV BERKELEY

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P-14
CONDITIONAL CONVERSATIONAL COMMAND PROCESSING.
AD-707 356

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R-22
REFERENCE MANUAL FOR THE TIME-SHARING EXECUTIVE.
AD-667 636

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R-22
REFERENCE MANUAL FOR THE TIME-SHARING EXECUTIVE.
AD-682 350

•CALIFORNIA UNIV LOS ANGELES DEPT OF ENGINEERING

• • •

68-62
A PROBLEM ORIENTED LANGUAGE AND A TRANSLATOR FOR PARTIAL DIFFERENTIAL EQUATIONS.
AD-679 726

•CALIFORNIA UNIV SANTA BARBARA

• • •

RESEARCH IN ON-LINE COMPUTATION.
(AFCRL-71-0530)
AD-735 300

•CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER SCIENCE

• • •

THE DESCRIPTION, SIMULATION, AND AUTOMATIC IMPLEMENTATION OF DIGITAL COMPUTER PROCESSORS.
(AFOSR-70-0184TR)
AD-700 144

• • •

MORE ON SIMULATION LANGUAGES AND DESIGN METHODOLOGY FOR COMPUTER SYSTEMS.
(AFOSR-70-1564TR)
AD-706 805

• • •

CONVERSATIONAL PROGRAMMING - APL. AN IMPLEMENTATION IN BLISS.
(AFOSR-TR-71-2376)
AD-729 941

• • •

COMPUTER SCIENCE RESEARCH REVIEW 1970-71.
(AFOSR-TR-72-0462)
AD-737 563

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CMU-CS-71-103
C.A.I.--A LISP PROCESSOR FOR C.A.I.
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• • •

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• • •

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• • •

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• • •

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• • •

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• • •

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COMPUTER-ASSISTED INSTRUCTION: A SURVEY OF THE LITERATURE. THIRD EDITION.
AD-681 079

•HIRSCHFIELD, GERARD A.
• • •
SPACE PROGRAMMING LANGUAGE (SPL/J61) PROGRAMMER'S MANUAL.
AD-679 134

•HODGSON, CHARLES
• • •
PDP-9 BASIC INTERPRETER.
AD-721 477

•HOLLAND, WADE B.
• • •
SOVIET CYBERNETICS: RECENT NEWS ITEMS, VOLUME 3, NUMBER 1, 1969.
AD-683 770
• • •
SOVIET CYBERNETICS REVIEW. VOLUME 3, NUMBER 8, 1969.
AD-693 121

•HOWARD, JAMES A.
• • •
RESEARCH IN ON-LINE COMPUTATION.
AD-735 300

•HSU, JU-TUNG
• • •
STRACHEY'S GENERAL PURPOSE MACROGENERATOR IN FORTRAN.
AD-715 661

•HUNT, EARL
• • •
A METHOD FOR BUILDING DATA MANAGEMENT PROGRAMS.
AD-732 972

•HUNT, EARL B.
• • •
WRITEACOURSE: AN EDUCATIONAL PROGRAMMING LANGUAGE.
AD-670 524

•JEN, N.
• • •
OPERATING MANUAL FOR CYCLONE, A TWO-

DIMENSIONAL HYDRODYNAMIC LAGRANGIAN CODE.
AD-830 506

•KALASHIAN, MICHAEL ALEX
• • •
DES-1: AN INTER-ACTIVE CONTINUOUS SYSTEM SIMULATION LANGUAGE.
AD-701 677

•KALIKOW, DANIEL N.
• • •
INFORMATION PROCESSING MODELS AND COMPUTER AIDS FOR HUMAN PERFORMANCE.
AD-711 378

•KALLANDER, JOHN W.
• • •
NELIAC-N, THE NAVEC VERSION OF THE NELIAC PROGRAMMING LANGUAGE.
AD-672 315

•KAPPS, CHARLES A.
• • •
SPRINT - A PROGRAMMING LANGUAGE WITH GENERAL STRUCTURE.
AD-725 988

•KAYPES, RICHARD E.
• • •
THE ADVANCED TARGETING STUDY. PHASE IF. VOLUME V. SPACE PROGRAMMING LANGUAGE (MARK II) COMPILER. PART A. PROGRAM DESCRIPTION.
AD-735 616

•KEELER, FORREST S.
• • •
COMPUTER ARCHITECTURE STUDY.
AD-720 798

•KILDALL, GARY
• • •
A METHOD FOR BUILDING DATA MANAGEMENT PROGRAMS.
AD-732 977

•KITOV, A. I.
• • •
PROGRAMMING INFORMATION - LOGIC PROBLEMS. PART II. (SELECTED ARTICLES).
AD-691 644

•KIVIAT, P. J.
• • •
THE SIMSCRIPT II PROGRAMMING LANGUAGE: IBM 360 IMPLEMENTATION.
AD-692 695

•KLATT, DENNIS H.
• • •
INFORMATION PROCESSING MODELS AND COMPUTER AIDS FOR HUMAN PERFORMANCE.
AD-711 378

•KLYKOV, YU. I.
• • •
COMPUTER SYSTEMS (SELECTED ARTICLES).
AD-685 527

•KNUDSEN, H.
• • •
C.A.I--A LISP PROCESSOR FOR C.A.I.
AD-731 232

•KOCHEN, MANFRED
• • •
AUTOMATIC QUESTION-ANSWERING OF ENGLISH-LIKE QUESTIONS ABOUT ARITHMETIC.
AD-682 339

•KOLINKO, A. I.
• • •
MANIPULATION SYSTEM FOR INPUT OF INQUIRIES IN SIMPLIFIED RUSSIAN LANGUAGE INTO A COMPUTER.
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• • •
A CONVERSION SYSTEM FOR INPUT INTO A COMPUTER OF QUESTIONS IN SIMPLIFIED RUSSIAN.
AD-727 930

•KORENJAK, ALLEN J.
• • •
A STUDY IN PROGRAM CONVERSION.

AD-717 392

*KORNIENKO, G. M.

• • •

AN AUTOMATIC PROGRAMMING SYSTEM FOR THE M-20 MACHINE.
AD-682 110

*KOSY, D. W.

• • •

EXPERIENCE WITH THE EXTENDABLE COMPUTER SYSTEM SIMULATOR.
AD-737 325

*KOTLI, M.

• • •

PROGRAMS FOR THE 'MINSK-2' DIGITAL COMPUTER: A MALGOL TRANSLATOR AND INSTRUCTIONS FOR ITS USE.
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*KRIBS, M. DEWEY

• • •

FOCAL MANUAL FOR CAI CODING ON THE TSS/8 SYSTEM.
AD-717 736

*KRINITSKII, N. A.

• • •

PROGRAMMING (SECOND EDITION, REVISED AND EXPANDED).
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*KRITT, BRIAN

• • •

A PROGRAMMING SYSTEM FOR THE CONSTRUCTION OF EFFICIENTLY-RUNNING HARDWARE-INDEPENDENT GENERAL SYNTAX ANALYSIS PACKAGES.
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*KROFT, D.

• • •

STUDY OF A COMPUTER FOR DIRECT EXECUTION OF LIST PROCESSING LANGUAGE.
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*KROHN, KENNETH

• • •

ALGEBRAIC THEORY OF MACHINES, LANGUAGES, AND SEMIGROUPS.
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*KROHN, KENNETH B.

• • •

A PROGRAMMING SYSTEM FOR THE CONSTRUCTION OF EFFICIENTLY-RUNNING HARDWARE-INDEPENDENT GENERAL SYNTAX ANALYSIS PACKAGES.
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*KRUEGER, SCOTT E.

• • •

A PROGRAMMING LANGUAGE/1500 (APL/1500) OPERATOR'S GUIDE.
AD-730 453

*KUZMENKO, G. E.

• • •

INPUT LANGUAGE AND ADDRESS TRANSLATOR FOR THE DIGITAL COMPUTER MINSK-12.
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*KUZNETSOV, F. K.

• • •

A COMPILER FOR THE DIGITAL COMPUTER 'MINSK-12' FROM THE EAN LANGUAGE.
AD-716 514

*LADNER, T. D.

• • •

A SIMPLE METHOD OF ADDING A NEW DATA TYPE TO FORTRAN.
AD-714 147

*LANGDON, G. C.

• • •

THEORY OF ADAPTIVE MECHANISMS. VOLUME II. SELECTED TOPICS IN AUTOMATA THEORY.
AD-680 793

*LAURANCE, NEAL L.

• • •

AN ASSEMBLY LANGUAGE SYSTEM FOR DEC MINICOMPUTERS.
AD-689 862

*LEAHY, JOHN FRANCIS, III

• • •

A UNIVERSAL SYNTAX CHECKER.
AD-704 087

•LEESON, ANDREW J.
• • •
ADVANCED MATERIEL SYSTEMS PLANNING PROGRAM TRANSLATION AND SIMULATION.
AD-726 876

•LESZCZYNSKI, JERZY
• • •
DESCRIPTION OF LANGUAGE AND ALGOL TRANSLATOR FOR UMC MACHINES.
AD-869 061

•LETICHEVSKII, A. A.
• • •
THE BASIC LANGUAGE OF THE LEVEL OF A MNEMONIC CODE.
AD-727 249

•LICKLIDER, J. C. R.
• • •
PROJECT MAC PROGRESS REPORT VIII, JULY 1970 TO JULY 1971.
AD-735 148

•LIEBERMAN, ROBERT N.
• • •
RSVP-RELATIONAL STRUCTURE VERTEX PROCESSOR.
AD-684 107

•LIPPERT, HENRY T.
• • •
APL: AN ALTERNATIVE TO THE MULTI-LANGUAGE ENVIRONMENT FOR EDUCATION.
AD-710 424

•LONDON, RALPH L.
• • •
CORRECTNESS OF TWO COMPILERS FOR A LISP SUBSET.
AD-738 568

•LUTZKY, M.
• • •
OPERATING MANUAL FOR CYCLONE: A TWO-DIMENSIONAL HYDRODYNAMIC LAGRANGIAN CODE.
AD-830 505

•MACNEILAGE, D. C.
• • •
JOSTRAN: AN INTERACTIVE JOSS DIALECT FOR WRITING AND DEBUGGING FORTRAN PROGRAMS.
AD-704 568

•MAKAROV, G. P.
• • •
COMPUTER SYSTEMS (SELECTED ARTICLES).
AD-685 527

•MALCOLM, MICHAEL A.
• • •
PL360(REVISED). A PROGRAMMING LANGUAGE FOR THE IBM360.
AD-727 115

•MARILL, THOMAS
• • •
NETWORK DATA HANDLING SYSTEM. (DATACOMPUTER PROJECT).
AD-741 263

•MATHIEU, RICHARD D.
• • •
MAN-COMPUTER INTERACTION CONFERENCE. NATIONAL PHYSICAL LABORATORY, TEDDINGTON, MIDDLESEX, ENGLAND.
AD-728 377

•MAYOROV, S. A.
• • •
MINIATURE COMPUTERS.
AD-727 190

•MCCRAITH, DOUGLAS L.
• • •
DEANE: A COMPUTER AID FOR BALLISTIC MISSILE DEFENSE ANALYSIS.
AD-727 046

•MCDONALD, DOROTHY
• • •
SOVIET CYBERNETICS: RECENT NEWS ITEMS, VOLUME 3, NUMBER 1, 1969.
AD-683 770

•MCDONALD, JAMES NORMAN

• • •
A COMMAND AND QUERY LANGUAGE INTERPRETER FOR AN EXTENDED DATA MANAGEMENT SYSTEM.
AD-723 221

•MCKAY, JOHN NORMAN, JR
• • •
TELE-CODER: A SYSTEM FOR CODING AND DECODING PROGRAMMING LANGUAGES FOR USE WITH A PUSH BUTTON TELEPHONE.
AD-736 544

•MCMURCHIE, THOMAS D.
• • •
MANUAL OF APL/1500 FUNCTIONS; SYSTEM FUNCTIONS.
AD-717 737
• • •
A PROGRAMMING LANGUAGE/1500 (APL/1500) OPERATOR'S GUIDE.
AD-730 453

•MEALY, GEORGE H.
• • •
PROGRAM TRANSFERABILITY STUDY.
AD-678 589

•MEISEL, W. S.
• • •
STRUCTURAL LANGUAGES AND BIOMEDICAL SIGNAL ANALYSIS USING INTERACTIVE GRAPHICS.
AD-739 258

•MELTZER, J.
• • •
COMPUTER ANIMATION: A LITERATURE SURVEY.
AD-696 989

•MILLER, DUNCAN C.
• • •
INFORMATION PROCESSING MODELS AND COMPUTER AIDS FOR HUMAN PERFORMANCE.
AD-711 378

•MILLS, DAVID L.
• • •
AN ASSEMBLY LANGUAGE SYSTEM FOR DEC MINICOMPUTERS.
AD-689 862

•MIRONOV, G. A.
• • •
PROGRAMMING (SECOND EDITION, REVISED AND EXPANDED).
AD-682 398

•MORAN, TOM
• • •
COMPUTER SCIENCE RESEARCH REVIEW 1970-71.
AD-737 863

•MORENOFF, EDWARD
• • •
PROGRAM TRANSFERABILITY STUDY.
AD-678 589

•MORRIS, ALFRED H., JR
• • •
FLAP PROGRAMMER'S MANUAL.
AD-725 468

•MORRISSEY, J.
• • •
COMPUTER PROGRAMS: INTERNAL REPRESENTATION.
AD-674 617

•MUNSON, J. H.
• • •
GRAPHICAL-DATA-PROCESSING RESEARCH STUDY AND EXPERIMENTAL INVESTIGATION.
AD-670 054

•MURRILL, PAUL W.
• • •
APPLICATION OF SIMULATION TO THE GENERALIZED OPTIMIZATION OF PROCESS CONTROL SYSTEMS.
AD-688 805

•MYAMLIN, A. N.
• • •
CYBERNETICS. NUMBER 6, 1967 (SELECTED ARTICLES).
AD-702 895

THEORY, ADVANCED CONCEPTS AND DESIGNS.
AD-687 841

•PETTY, JAMES S.
• • •
FORTRAN H: PROGRAMMING PACKAGE FOR BAND MATRICES AND VECTORS.
AD-691 431

•PIACESI, D.
• • •
OPERATING MANUAL FOR CYCLONE, A TWO-DIMENSIONAL HYDRODYNAMIC LAGRANGIAN CODE.
AD-830 506

•POLLACK, F. J.
• • •
CONVERSATIONAL PROGRAMMING - APL. AN IMPLEMENTATION IN BLISS.
AD-729 941

•POSPELOV, D. A.
• • •
COMPUTER SYSTEMS (SELECTED ARTICLES).
AD-685 527

•POTAPOVA, M. G.
• • •
HARDWARE FOR USE WITH ALGOL-60 AUTOMATIC PROGRAMMING.
AD-727 266

•POTEAT, WILLIAM OTTO, JR
• • •
A BASIC LIST-ORIENTED INFORMATION STRUCTURES SYSTEM (BLISS).
AD-713 079

•POWERS, V. MICHAEL
• • •
AN ASSEMBLY LANGUAGE SYSTEM FOR DEC MINICOMPUTERS.
AD-689 862

•PRICE, W. R.
• • •
CONVERSATIONAL PROGRAMMING - APL. AN IMPLEMENTATION IN BLISS.
AD-729 941

•PRITSKER, A. ALAN B.
• • •
JASP: A SIMULATION LANGUAGE FOR A TIME-SHARED SYSTEM.
AD-709 177

•PRYWES, N. S.
• • •
DESIGN OF THE DATA DESCRIPTION LANGUAGE PROCESSOR.
AD-736 590

•PUGH, ROBERT E.
• • •
A LANGUAGE FOR NONLINEAR PROGRAMMING PROBLEMS.
AD-715 372

•RAFFEL, JACK I.
• • •
GRAPHICS.
AD-671 126

•RAKHENDI, M.
• • •
PROGRAMS FOR THE 'MINSK-2' DIGITAL COMPUTER: A MALGOL TRANSLATOR AND INSTRUCTIONS FOR ITS USE.
AD-682 793

•RAMIREZ, JESUS A.
• • •
DESIGN OF THE DATA DESCRIPTION LANGUAGE PROCESSOR.
AD-736 590

•RAW, O. I.
• • •
ALGORITHMIC LANGUAGE PROYEKT.
AD-726 610

•REDDING, JOHN L.
• • •
COMPUTER NETWORK SIMULATOR.
AD-730 053

•REID, ILENE
• • •
LARGE SCALE INFORMATION PROCESSING

SYSTEM. VOLUME I. COMPILER, NATURAL LANGUAGE, AND INFORMATION PROCESSING.
AD-687 840

• • •

LARGE SCALE INFORMATION PROCESSING SYSTEM. VOLUME II. SYSTEMS: THEORY, ADVANCED CONCEPTS AND DESIGNS.
AD-687 841

•REIGEL, EARL W.

• • •

PARALLELISM EXPOSURE AND EXPLOITATION IN DIGITAL COMPUTING SYSTEMS.
AD-853 521

•REYNOLDS, EDNA C.

• • •

FOCAL MANUAL FOR CAI CODING ON THE TSS/8 SYSTEM.
AD-717 736

•RHODES, JOHN L.

• • •

ALGEBRAIC THEORY OF MACHINES, LANGUAGES, AND SEMIGROUPS.
AD-696 996

•RHODUS, N. WAYNE

• • •

J-3, PL/I AND A DATA BASE.
AD-682 305

•RICHARDS, ELAIN

• • •

SOFTWARE TECHNOLOGY STUDY FOR ADVANCED GUIDANCE COMPUTER ARCHITECTURES.
AD-741 837

•RIZZO, M. F.

• • •

CONVERSATIONAL PROGRAMMING - APL, AN IMPLEMENTATION IN BLISS.
AD-729 941

•ROMANOV, A. K.

• • •

COMPUTER SYSTEMS (SELECTED ARTICLES).
AD-685 527

•ROSE, GENE F.

• • •

ABSTRACT FAMILIES OF PROCESSORS.
AD-680 782

•ROSSMANN, G.

• • •

LARGE SCALE INFORMATION PROCESSING SYSTEMS. VOLUME III. INVESTIGATIONS IN COMPUTER LANGUAGES.
AD-708 727

•ROTH, MICHAEL CHARLES

• • •

A SIMULATED MICRO-PROGRAMMED COMPUTER UTILIZING THE GRAPHIC DISPLAY OF AN IBM 360.
AD-701 680

•ROVNER, P. D.

• • •

AN ALGOL-BASED ASSOCIATIVE LANGUAGE.
AD-675 037

•RUBEY, RAYMOND J.

• • •

COMPARATIVE EVALUATION OF PL/I.
AD-669 096

•RUTH, STEPHEN R.

• • •

LARGE COBOL CONVERSION - A STRATEGY FOR CONTROLLED CHANGE.
AD-734 168

•SARGENT, ROBERT G.

• • •

LARGE SCALE INFORMATION PROCESSING SYSTEM. VOLUME I. COMPILER, NATURAL LANGUAGE, AND INFORMATION PROCESSING.
AD-687 840

•SASSON, A.

• • •

STUDY OF A COMPUTER FOR DIRECT

EXECUTION OF LIST PROCESSING LANGUAGE.
AD-680 399

•SATTLEY, KIRK
• • •
PROGRAM TRANSFERABILITY STUDY.
AD-678 589

•SAYLOR, ROY
• • •
SOFTWARE TECHNOLOGY STUDY FOR ADVANCED GUIDANCE COMPUTER ARCHITECTURES.
AD-741 837

•SCHANK, ROGER C.
• • •
THE USE OF CONCEPTUAL RELATIONS IN CONTENT ANALYSIS AND DATA BASE STORAGE.
AD-666 992

•SCHWARCZ, ROBERT M.
• • •
A DEDUCTIVE QUESTION ANSWERER FOR NATURAL-LANGUAGE INFERENCE.
AD-681 531

•SEMIK, V. P.
• • •
INPUT LANGUAGE AND ADDRESS TRANSLATOR FOR THE DIGITAL COMPUTER MINSK-12.
AD-703 784

•SHORE, JOHN E.
• • •
SOFTWARE SIMULATION OF AN ASSOCIATIVE PROCESSOR.
AD-736 183

•SHUKIAR, H. J.
• • •
THE SIMSCRIPT II PROGRAMMING LANGUAGE: IBM 360 IMPLEMENTATION.
AD-692 696

•SIBLEY, EDGAR
• • •
TRAMP: A RELATIONAL MEMORY WITH AN ASSOCIATIVE BASE.
AD-672 206

•SIMMONS, ROBERT F.
• • •
A DEDUCTIVE QUESTION ANSWERER FOR NATURAL-LANGUAGE INFERENCE.
AD-681 531

•SINGER, EDWARD ANTHONY, JR
• • •
A REAL TIME GAMING SYSTEM.
AD-689 726

•SKARNYKIN, V. S.
• • •
CYBERNETICS. NUMBER 6, 1967 (SELECTED ARTICLES).
AD-702 895

•SMIRNOV, V. K.
• • •
CYBERNETICS. NUMBER 6, 1967 (SELECTED ARTICLES).
AD-702 895

•SMITH, CECIL L.
• • •
APPLICATION OF SIMULATION TO THE GENERALIZED OPTIMIZATION OF PROCESS CONTROL SYSTEMS.
AD-688 805

•SMITH, DAVID CANFIELD
• • •
MLISP.
AD-716 564

•SMITH, DIANE P.
• • •
A MANUAL WITH EXAMPLES FOR THE DATA DESCRIPTION LANGUAGE (DDL).
AD-726 707

•SMITH, DIANE PIROG
• • •
A DATA DESCRIPTION FACILITY.
AD-703 244

•SMITH, M. H. A.
• • •

CORAL 66 LIBRARY PROCEDURES FOR MECSL 900 COMPUTERS.
AD-729 704

•SMITH, WILLIAM R.
• • •
SIMULATION MODEL FOR THE AADC.
AD-714 140

•SOLOW, HAROLD
• • •
DESIGN OF THE DATA DESCRIPTION LANGUAGE PROCESSOR.
AD-736 590

•SRINIVASAN, CHITOOR V.
• • •
CDLI, A COMPUTER DESCRIPTION LANGUAGE. PART I. THE NATURE OF THE DESCRIPTION LANGUAGE AND ORGANIZATION OF DESCRIPTIONS. PART II. KINDS OF DESCRIPTIONS OF A COMPUTING SYSTEM.
AD-693 555
• • •
ON THE IMPLEMENTATION OF THE DESCRIPTIVE DATA BASE, BASED ON CDLI.
AD-709 224

•STABLER, E.
• • •
LARGE SCALE INFORMATION PROCESSING SYSTEMS. VOLUME III. INVESTIGATIONS IN COMPUTER LANGUAGES.
AD-708 727

•STALLARD, JOHN M.
• • •
NATIONAL MILITARY COMMAND SYSTEM INFORMATION PROCESSING SYSTEM 360 FORMATTED FILE SYSTEM (NIPS 360 FFS). PROGRAMMING SPECIFICATIONS MANUAL. VOLUME I. INTRODUCTION.
AD-737 045

•STANILOVSKII, A. I.
• • •
HARDWARE FOR USE WITH ALGOL-60 AUTOMATIC PROGRAMMING.
AD-727 266

•STARKS, DAVID D.
• • •
RESEARCH TOWARD ADVANCING AIR FORCE TRAINING TECHNIQUES THROUGH COMPUTER ASSISTED INSTRUCTION.
AD-728 223

•STOLUROW, LAWRENCE M.
• • •
THE USE OF COMPUTERS IN HIGH SCHOOLS.
AD-678 741

•STONER, WILLIAM J.
• • •
COMPARATIVE EVALUATION OF PL/I.
AD-669 096

•STRONGIN, R. G.
• • •
CYBERNETICS. NUMBER 6, 1967 (SELECTED ARTICLES).
AD-702 895

•SWETS, JOHN A.
• • •
INFORMATION PROCESSING MODELS AND COMPUTER AIDS FOR HUMAN PERFORMANCE.
AD-711 378

•THOMAS, DAVID B.
• • •
MANUAL OF APL/1500 FUNCTIONS: SYSTEM FUNCTIONS.
AD-717 737

•THOMAS, ROBERT H.
• • •
A MODEL FOR PROCESS REPRESENTATION AND SYNTHESIS.
AD-726 049

•THORELL, CHARLES SCOTT
• • •
A BASIC LIST-ORIENTED INFORMATION STRUCTURES SYSTEM (BLISS).
AD-713 079

GUIDANCE COMPUTERS. PART 2. GUIDANCE COMPUTER ARCHITECTURE STUDY.
AD-723 669

• • •

SOFTWARE TECHNOLOGY STUDY FOR ADVANCED GUIDANCE COMPUTER ARCHITECTURES.
AD-741 837

•WESTERVELT, F. H.

• • •

CONCOMP: RESEARCH IN CONVERSATIONAL USE OF COMPUTERS.
AD-881 053

•WICK, RICHARD C.

• • •

COMPARATIVE EVALUATION OF PL/I.
AD-669 096

•WILLIAMS, JOHN S.

• • •

RACMAP: AN EXTENSION OF THE IBMAP MACRO PROCESSOR. A PROGRAMMER'S REFERENCE MANUAL.
AD-684 909

•WILLIAMS, ROBIN

• • •

A SURVEY AND AN ANNOTATED BIBLIOGRAPHY OF DATA STRUCTURES FOR COMPUTER GRAPHICS SYSTEMS.
AD-697 800

• • •

SURVEY OF DATA STRUCTURES FOR COMPUTER GRAPHICS SYSTEMS.
AD-725 284

•WOOD, ROGER C.

• • •

RESEARCH IN ON-LINE COMPUTATION.
AD-735 300

•WRIGHT, BETTY J.

• • •

FOCAL MANUAL FOR CAI CODING ON THE TSS/8 SYSTEM.
AD-717 736

•WYATT, JOE B.

• • •

OSSL - OPERATING SYSTEMS SIMULATON LANGUAGE. A USER'S GUIDE.
AD-735 959

•YAKIMENKO, S. N.

• • •

MANIPULATION SYSTEM FOR INPUT OF INQUIRIES IN SIMPLIFIED RUSSIAN LANGUAGE INTO A COMPUTER.
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• • •

A CONVERSION SYSTEM FOR INPUT INTO A COMPUTER OF QUESTIONS IN SIMPLIFIED RUSSIAN.
AD-727 930

•YUSHCHENKO, E. L.

• • •

AN AUTOMATIC PROGRAMMING SYSTEM FOR THE M-20 MACHINE.
AD-682 110

•ZAITSEV, N. G.

• • •

A SYSTEM FOR AUTOMATING ENGINEERING CALCULATIONS BASED ON THE 'MINSK-1' COMPUTER.
AD-695 194

•ZAKREVSKII, A. D.

• • •

LYAPAS ALGORITHMIC LANGUAGE AND AUTOMATION OF SYNTHESIS OF RELAY SYSTEMS.
AD-702 953

•ZELENTSOV, B. P.

• • •

COMPUTER SYSTEMS (SELECTED ARTICLES).
AD-685 527

•ZHITENEVA, T. P.

• • •

HARDWARE FOR USE WITH ALGOL-60 AUTOMATIC PROGRAMMING.
AD-727 264

•ZILLES, STEPHEN N.

• • •

205-209

AN EXPANSION OF THE DATA
STRUCTURING CAPABILITIES OF PAL.
AD-720 761

•ZOSEL, MARY

• • •

WRITEACOURSE: AN EDUCATIONAL
PROGRAMMING LANGUAGE.
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•AF-AFOSR-1944-70
WASHINGTON UNIV SEATTLE DEPT OF PSYCHOLOGY
TR-70-12-09
(AFOSR-TR-71-2853)
AD-732 972

•ARPA ORDER-189-1
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•ARPA ORDER-627
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•ARPA ORDER-691
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(ESD-TR-69-384)
S AD-700 316
(ESD-TR-70-161)
S AD-709 187

•ARPA ORDER-716
MICHIGAN UNIV ANN ARBOR
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AD-672 206
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AD-689 842
TR-21
AD-702 198
MICHIGAN UNIV ANN ARBOR COMPUTER CENTER
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F AD-881 053

•ARPA ORDER-827
CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER SCIENCE
(AFOSR-TR-71-2376)
AD-729 941

•ARPA ORDER-865
CALIFORNIA UNIV SANTA BARBARA
(AFCRL-71-0530)
F AD-738 300

•ARPA ORDER-890-4
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS
BBN-2008
(AFOSR-TR-71-0752)
AD-711 378

•ARPA ORDER-1731
COMPUTER CORP OF AMERICA CAMBRIDGE MASS
AD-741 263

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STAN-CS-71-216
AD-727 115

•AT(04-3)-515
STANFORD UNIV CALIF STANFORD ELECTRONICS LABS
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•DA-28-043-AMC-01901(E)
STANFORD RESEARCH INST MENLO PARK CALIF
30
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AD-670 054

•DA-28-043-AMC-02377(E)
PENNSYLVANIA UNIV PHILADELPHIA MOORE SCHOOL OF ELECTRICAL ENGINEERING
68-22
(ECOM-02377-4)
AD-670 967

•DA-28-043-AMC-02463(E)
BURROUGHS CORP PAOLI PA DEFENSE SPACE AND SPECIAL SYSTEMS GROUP
TR-69-4

(ECOM-02463-F)
F AD-853 523

•DA-31-124-ARO(D)-98
MOORE SCHOOL OF ELECTRICAL ENGINEERING PHILADELPHIA PA
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